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COVER: Defender transformed
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Our contact details

Warners Group Publications, The Maltings, West Street, Bourne, Lincolnshire, PE10 9PH
Tel: 01778 391000
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WELCOME

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Billing's legendary off-road lake crossing has unique appeal

LRM and Real Billing join forces

IT gives me great pleasure to announce that Land Rover Monthly magazine and the Billing Off Road Show have joined forces. Therefore, the ever-growing 2020 Billing Off Road show will be held in association with Land Rover Monthly magazine on June 27 and 28 on a farm in the sleepy village of Little Houghton, Northamptonshire. LRM has a great relationship with the organisers and landowners, Sarah and Richard Arrowsmith and we're delighted about the partnership. Please turn to page 8 for more developments and keep an eye on our social media channels for updates on special show ticket offers for LRM readers and subscribers.

In what can only be described as the most unpopular move in the history of Land Rover shows in the world, Live Promotions announced at the back end of 2019 that they will be hosting the Billing Land Rover Show at the Billing Aquadrome on the very same weekend as the Billing Off Road Show. I mean, who does that sort of thing? So now you will have two Land Rover shows on the same weekend, separated only by the width of the River Nene. I urge you to support the hard-working Arrowsmiths, who for past four years have tried to create a show that is

family-friendly, affordable and has a legendary off-road course.

Why go to a Land Rover show if you cannot go off-roading in a safe and on-site track? That's why we at LRM are supporting the Billing Off Road Show – and you should do the same.

The eagle-eyed among you will have noticed via the information panel of the February issue that LRM now has new owners. Just before last Christmas (not to be confused with the George Michael hit) we became officially part of Warners Group Publications Ltd. They have a proven track record with specialist publications, hosting shows, successful subscription drives and digital campaigns – all of which bodes well for the future of Britain's best Land Rover magazine. We're very excited.

Rest assured that as far as the editorial and advertising team are concerned, absolutely nothing is changing. Our great team will continue to produce great content with your ongoing support.

Some of you may have noticed the improved printing and paper quality in our February issue. Thanks for that, Warners. I can confidently assure you this is only the beginning. I know it sounds cheesy, but watch this space. I am excited about the future of LRM and so should you be.

Patrick Cruywagen, **Editor**



Dave Phillips
He's celebrating 14 years of Disco ownership with his faithful 300Tdi — p120



Nick Dimbleby
Nick's stumbled upon a 110in Range Rover ambulance turned shooting brake — p54



Gary Pusey
Gary interviews a man who helped shape the destiny of modern Jaguar Land Rover — p98

LAND ROVER

LRM
MONTHLY

ISSUE 266 MARCH 2020

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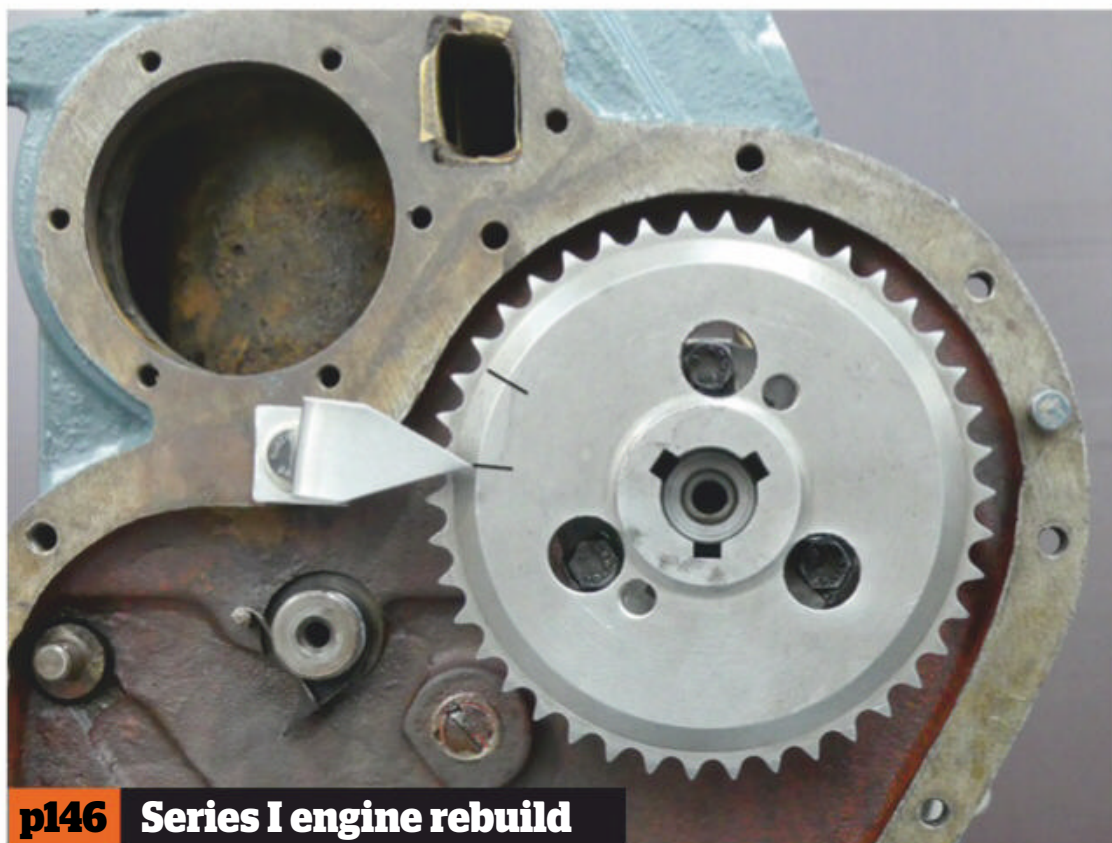
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p52 Range Rover Classic conversion



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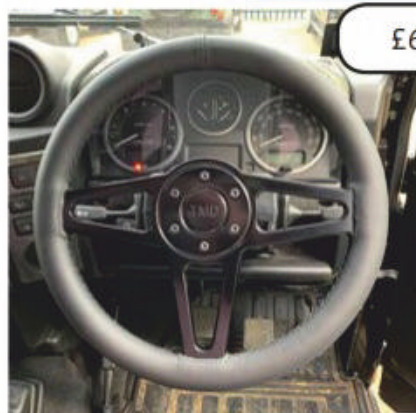
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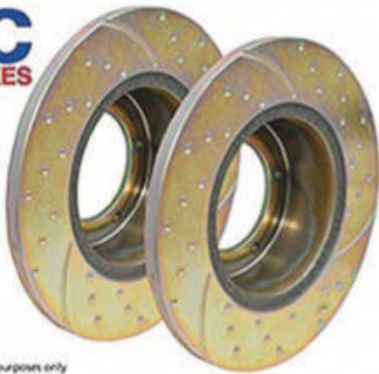


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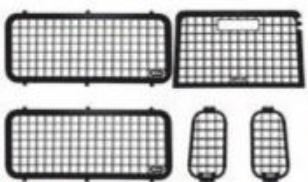
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LRM and the Billing Off Road Show join forces

WE'RE delighted to announce that LRM has partnered with the organisers of the 2020 Billing Off Road show. Held on June 27-28, this year's event in association with LRM promises to be the biggest and most action-packed one yet, with club and trade stand bookings already at record levels.

The magazine has a long-standing and fruitful relationship with Landy-loving hosts Sarah and Richard Arrowsmith, including breaking the Guinness World Record for the largest parade of Land Rovers in 2018 and hosting special off-road days last year. This off-road mecca is the perfect fit.

"Unlike some other shows this one won't break the bank, or your Land Rover. For the last three years we have had glorious sunshine at the show, which is why the Landy fans converge in their droves," says editor Patrick Cruywagen. LRM advertising manager Steve Miller concurs: "I bring the caravan, kids, wife and dog along. It's that

kind of event. Loads of great Land Rovers, top ales and British food. What more could you want?"

In addition to the two on-site off-road courses (Riverside will only be open on the Friday, while Lakeside will be open over the weekend), expect club displays, trade stands and demo area (with Challenge South West extreme trucks offering thrilling passenger rides).

In a first for Billing there will be a 90 minutes 'Show and Tell' event on Saturday and Sunday. This will allow owners of select Land Rovers the opportunity to drive their vehicles onto a special stage and talk to the LRM team about why their vehicle is so special. If you would like your Land Rover featured, email patrick@lrn.co.uk.

And there's some more good news – LRM has a special Billing Off Road Show subs offer. Sign up for a subscription and you can receive five issues for £5 – and receive a free show ticket! Latest updates at billingoffroadshow.co.uk.

OBITUARY

SULTAN Qaboos, often referenced by Thom Westcott in her columns, sadly passed away on Friday January 10. He loved Land Rovers and drove them all of his life. His coffin was taken to his final resting place by a rather ornate Land Rover 110 flanked

by a cavalcade of other unique SUVs. The Arabic in the picture reads: "In 1970, we cried with joy, and today we cried with sadness," while the numerals are 1970 and 2020 respectively. Aged 79 he was the longest-serving leader in the Middle East and Arab world at the time of his death.

If you were a fan of the late Sultan of Oman, then you can buy one his old cars – a 1983 classic Range Rover with six doors (yes you read that right!). Converted by Glenfrome of Bristol, they specialised in (among other things) stretched Range Rovers for hunting-made Arabs.

Qaboos bin Said al-Said (to quote his full name) is in the copy of the log book and the vendor tells us that he purchased the vehicle directly from him many years ago, when he informed him the last time he used the vehicle was on a shooting party with Charles, Prince of Wales. If you are interested, call 01252 943756 for more information.



Brains and brawn



THE new Land Rover 90 and 110 proved just how capable and connected it was at CES 2020, the world's largest consumer electronics show. As the first-ever vehicle to feature two embedded LTE modems for enhanced connectivity, as well as the brand's new Pivi Pro touchscreen infotainment (which shares electronic hardware with the latest smartphones), it seems that JLR have stepped things up a gear when it comes to infotainment.

We'll try and cut through the technological jargon as best we can, but the Pivi Pro system (which is apparently fast-responding and intuitive – two words we'd never use to describe Land Rovers previous head units) allows customers to make full use of new Defender's Software-Over-The-Air (SOTA) technology, without compromising its ability to stream

music and connect to apps on the move. With its own designated LTE modem and eSIM, the SOTA technology can operate in the background, without affecting the day-to-day connectivity provided by the separate modem and eSIM in the infotainment module.

The first production vehicles will feature 16 control units (rising to more than 45 before the end of 2021) capable of receiving SOTA updates and meaning that in-dealer software updates could soon be a thing of the past for Defender customers. Now we all know we can stay connected, updated and entertained at all times anywhere in the world, we'll sleep a lot easier I'm sure!

If you've got £45,240 to spunk on a rugged but highly technological Land Rover Defender, you can configure yours here landrover.co.uk.



North West 4x4 Response teams up with Davanti

AS a crisis support charity, partnering with a state-of-the-art tyre manufacturer is a major coup. In the tie-up, Davanti's flagship all-terrains will play a vital role as North West 4x4 Response deliver medical teams, urgent response professionals and supplies to remote rural areas. From snowdrifts and floods during the winter to wildfires in the summer, North West 4x4 Response volunteer drivers use their own 4x4 vehicles to provide access for midwives, firefighters, food and supplies to communities that are difficult to access across Lancashire and Cheshire. They also assist in neighbouring areas when required as part of the national 4x4 Response network.

"We tested Terratoura comprehensively

and were very impressed with its performance in extremely challenging situations. It has handled everything we have thrown at it," said NW4x4 chairman, John Forsdick.

"Working with Davanti to offer Terratoura to our members will ease the cost burden on them. That makes a real difference to our volunteers as having access to top-quality equipment is important."

To underline their commitment, Davanti has also donated first responder medical kits and a defibrillator to the charity.

To learn more about North West 4x4 Response, visit nw4x4response.co.uk, and to discover Terratoura for yourself, visit davanti-tyres.com.



Land Rover wins hat trick

LAND Rover has won three titles at the UK's most prestigious motoring awards evening; the 42nd running of the What Car? Car of the Year Awards. The Range Rover Evoque was awarded Best Family SUV, as the Range Rover Velar took Best Coupe SUV, the all-new Land Rover Defender took home the Reader Award for Most Anticipated Car of 2020 with more than double the votes of any other car, and the Discovery was named Best Luxury SUV under £60,000. Presumably if you're reading this you have a Land Rover and don't need a What Car? stamp of approval, but as industry awards go it isn't a bad one to have we suppose!



LARA PLATMAN / PHOTOFEATURE

Nominations open for the National Land Rover Awards 2020

ITS official... Nominations are now open for the National Land Rover Awards 2020, the winners of which will be chosen at Land Rover Legends. Aimed at preservationists, restorers and enthusiasts, the focus of Land Rover Legends is on authenticity and originality, so if that sounds like your cup of tea make sure you make a note in your diary for June 6-7.

Going by the past events, the awards will attract a strong list of contenders – we don't envy the judges who will no doubt have a tough job coming to their final decisions. Owners who would like to nominate their cherished Land Rovers for the 2020 National Awards can do so now at landroverlegends.com. Shortlisted vehicles will be invited to be displayed in the main exhibition marquee where, on Sunday a panel of expert judges will select the Winner and Highly Commended entry in each category. There will also be an award for Best Club Display at the event, the Brian Bashall Memorial Award – in memory of the founder of the Dunsfold Collection.

Thruxton Circuit is the new host for 2020's show, which means a load of added features and activities, with the additional bonus of the event sitting alongside the Thruxton Historic race meeting, which you can watch at no extra charge when you purchase a ticket. Period Land Rovers will be playing their part in the running of the race meeting, such as providing recovery and shuttle services for drivers and officials, and there will even be a Land Rover parade each day on the start/finish line, so be sure to catch the track action.

The show itself will take place in its own area of the historic WW2 airfield that once was RAF Thruxton, and the venue offers extensive visitor facilities, including the new Thruxton Centre, a dedicated campsite, a kart track, a skid pan – and a superb 4x4 course, which will be open throughout the weekend. Visitors can expect all the usual Land Rover Legends show features such as the Star Cars, unique displays, anniversary celebrations, clubs, parades, exhibitors and traders.

One of the delights of the past two Land Rover Legends has been walking around the parking area, spotting the rare and the unexpected. On top of this dedicated parking area for all visitors arriving in a Land Rover, clubs are now invited to register for a reserved plot in the club zone, along with a special ticket offer. Organisers will also be asking for those owners with particularly notable vehicles to apply to join the Legends Line Up display feature.

The 50th anniversary of the Range Rover will be celebrated and represented by a number of Star Cars which will form the centrepiece of a panel discussion in the exhibition marquee on both the Saturday and the Sunday, featuring interviews with people closely associated with each of the models, either as development engineers, designers, owners, enthusiasts or preservationists.

Advance discounted tickets are available now, giving you two shows for the price of one! Full details can be found at landroverlegends.com.



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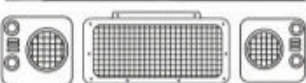
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THE OFFICE

Where we are:

Warners Group Publications,
The Maltings, West Street,
Bourne, Lincolnshire, PE10 9PH
Tel: 01778 391000
Fax: 01778 392422
Email: editorial@lrm.co.uk

The editorial team:

Editor Patrick Cruywagen
Art Editor Sam McMurray
Technical Editor Ed Evans
Sub Editors Louise Woodhams,
Dave Phillips

Regular contributors:

Louise Woodhams, Dave Phillips,
Richard Hall, Philip Bashall, Trevor
Cuthbert, Gary Pusey, Steve Miller,
Dave Barker, Thom Westcott, Jack
Dobson, Ian West, Mark Dixon,
Gary Stretton, Ali Cole, Aldri van
Jaarsveld, Alisdair Cusick, Tim
Hammond, Bob Weir

The support team:

Publisher
John Greenwood
01778 391116
john@gwarnersgroup.co.uk

Marketing/Brand Manager,
Lucie Cox
01778 395016

Advertising Production/ Design

01778 395075
Kate Goulding, kate.goulding@
warnersgroup.co.uk,
Viv Lane,
viv.lane@warnersgroup.co.uk

Accounts

01778 391000

Distribution

Warners Group Distribution
01778 391171

Reader contributions:

We welcome any correspondence
and feedback from readers, email
patrick@lrm.co.uk

Advertising:

Advertising Manager Steve Miller
Tel: +44 01778 391106 or
07586 023248
stevemiller@lrm.co.uk

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LETTERS

A tip for our Jack...

A strong suggestion for Jack Dobson, before he pulls the whole gearbox apart to find the problem causing it to jump out of fourth gear (LRM, February), is to check the spigot bush in the crankshaft, and to double-check the input pinion of the gearbox.

I had similar problems after replacing a slightly marked but serviceable pinion with a new replacement. The existing one had a small bevel on the edge of its bearing surface to help it locate into the spigot bush, while the replacement had rounded edges.

I had already rebuilt the gearbox several times following the installation of a Tdi engine, to no avail, when I recalled that apart from a few bearings, bushes and seals, the only major component replaced in the box at the same time as the Tdi fit was the pinion. Swapping back to the old pinion fixed the problem instantly and permanently.

I wish I had taken measurements of both pinions while they were out, and the thought that the pinion with the rounded tip may have been for a 2.6 six-cylinder model did occur. The shorter pinion would not reach the spigot bush and would allow the pinion to move out of axial alignment, throwing the synchro hub out of mesh. I did test the fit of both pinions in the bush



and both were snug, so it wasn't a diameter or wear issue, so must have been length.

Nick Boylen

Thanks for the tip, I will definitely carry out further investigation before launching into a full stripdown of the gearbox. (If only I could avoid tackling those notoriously difficult floor screws and propshaft bolts) — Jack.

D Day debut for Series I?

I noticed the historical mistake a long time ago that the correspondents in your Letters pages of the Winter Issue of LRM refer to, and it reminded me that a Series I Land Rover also appears in the black and white film "The Longest Day". Like "Ice Cold in Alex" I seem to remember that it appears



Take me to the church

THANKS to the LRM team for a brilliant magazine. We look forward to reading the articles and seeing all the different Land Rovers — especially the coolest of Defenders and what their owners do to them.

After doing up my Defender 110 Tdi we love exploring the Scottish countryside and enjoying the lovely scenery and nature. Gayle and wee Ness the terrier look forward to a

picnic lunch as well.

My Defender is on the market because my daughter is getting married and we might need to trade for a County-spec model with more seats for her many bridesmaids!

Kind Regards and all the best for 2020.

Andy Kerr

Thank you for your kind words — we hope the big day is a great success, whichever Land Rover you transport the bridesmaids in! — Ed.

momentarily towards the end, where the Allies are consolidating their beachhead (the film featuring the invasion of France by the Allies on June 6, 1944).

I've owned a number of Land Rovers since 1970 and currently own a 2012 Defender 110 County, which incidentally very shortly after the three-year warranty expired locked me out of the vehicle and it cost me a small fortune to have a new immobiliser and alarm fitted.

LRM is a great magazine, so keep up the good work!

Colin F Smith

Just think how much sooner we'd have won the war if the Series I had been around in 1945 — Ed.



RIP, Peter Stewart

I am writing to you with regards to Mr Peter Stewart, who Dave Phillips wrote an article about in LRM last year. Peter, if you recall, was the oldest active club member of the Scottish Green Road Club and also a marshal for the Scottish Land Rover Owners Club, at the grand age of 92.

I have the sad news that Peter passed away on December 18 after a short illness. His funeral was on Wednesday January 8, at Paisley crematorium.

Peter will be greatly missed by all his greenlaning family and friends.

I especially will miss him on the green runs, because I was 'tail gunner' (to make sure no one is lost or left behind) and Peter liked to be at the back of the pack just in case he needed a toilet break, as he didn't want to embarrass any of the lady members. He always made the comment that he felt safe knowing I was behind him if anything happened, but personally I think with Peter's vast driving experience on and off-road there would be more chance of him helping me! I already miss him dearly.

It would be very much appreciated if it's possible to mention Peter's passing in LRM, to honour his memory.

Allen Jackson, Scottish Green Road Club
Consider it done, Allen. Peter was a true gentleman and it was a pleasure to share his Land Rover memories — DP.



Flexing the design?

I was reading LRM winter 2020 issue 264, in particular the news story on page 13 — INEOS wins legal battle.

I think it's funny JLR are trying to trademark the shape of a car after their design team have come up with this all-new Defender.

I've been reading about the new Defender for two years and when I saw it I wasn't blown away, I was thoughtful.

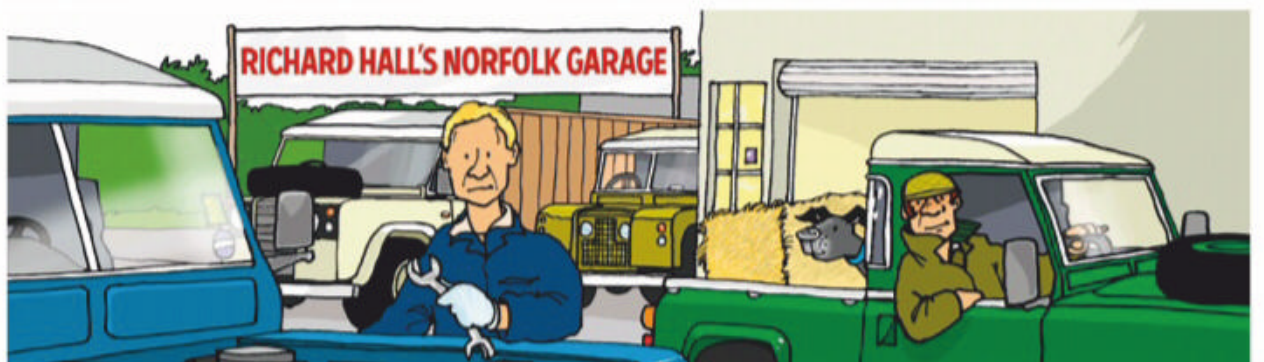
I kept thinking I'd seen something

similar in an old film. . . I recalled Matt Damon drives a similar-shaped car in "We Bought A Zoo". I didn't know the car's name though. Then watching "Daddy's Home" the other night I saw it again — it's the Ford Flex.

It seems to me that JLR appears to have beefed up a USA Ford Flex and named it the new Defender.

'Bees Motorz' (via email)

You're right, they do look similar — Ed.



Another Norfolk Garage fan

JUST inquiring as to when you will be putting together a compendium of Richard Hall's Norfolk Garage articles into book form? I stand by waiting to buy at least a half-dozen or more — one to keep and the rest to provide to friends. And I'm being serious.

Loren Lidsky, Boston, MA (USA)

That's a great idea, which we will definitely explore.

In the meantime, you can get an instant fix of Richard Hall's wit, wisdom and excellent down-to-earth workshop and advice by checking out his blog at glencoyne.co.uk/info.htm.

It's brilliant! — Ed.



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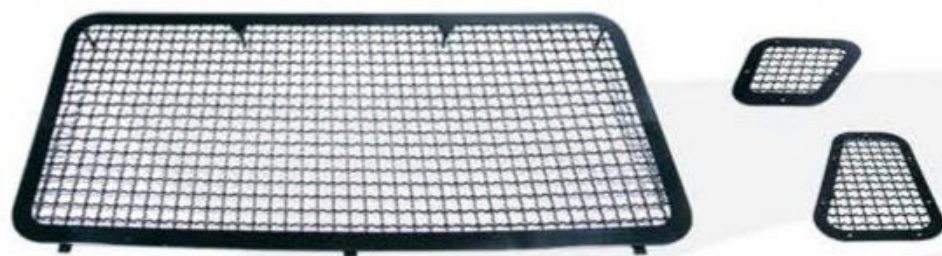
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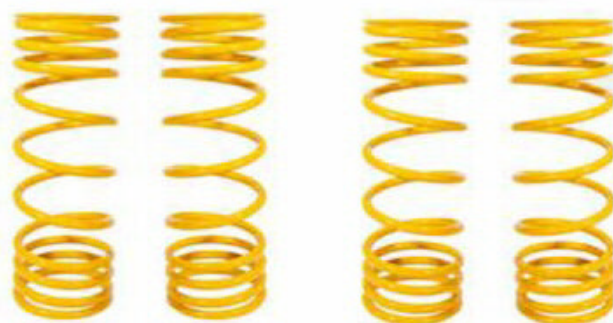
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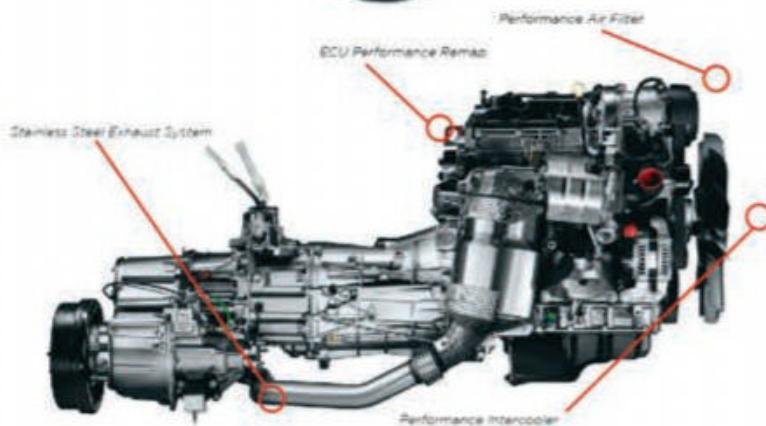
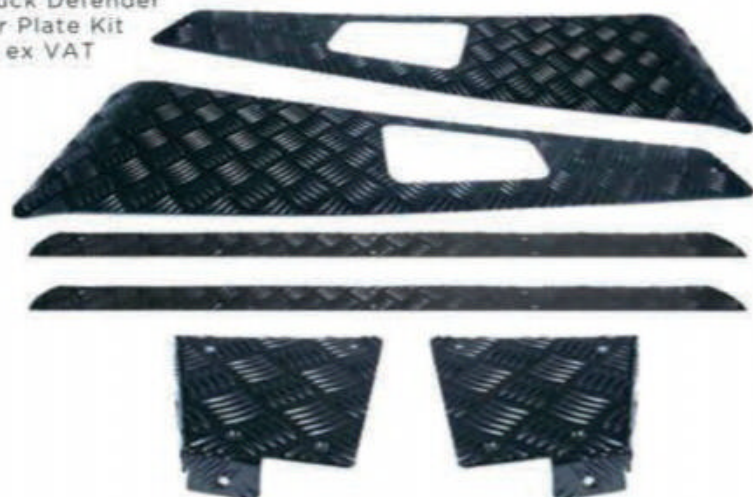


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YOUR PICTURES



Mind the tent – Shane Ferrar drives under low hanging branches



Jukka Kasanen from Norway loves going to his cottage in the Series III because it always gets him there



Brad and his Dad Lewis just chilling on the beach in North Carolina with their beloved Discovery 1. Nice flag chaps!



Craig Laird and the D2 Boys Club enjoying the sunshine and the 'Three Lochs Forest Drive'. We think they might be in Scotland

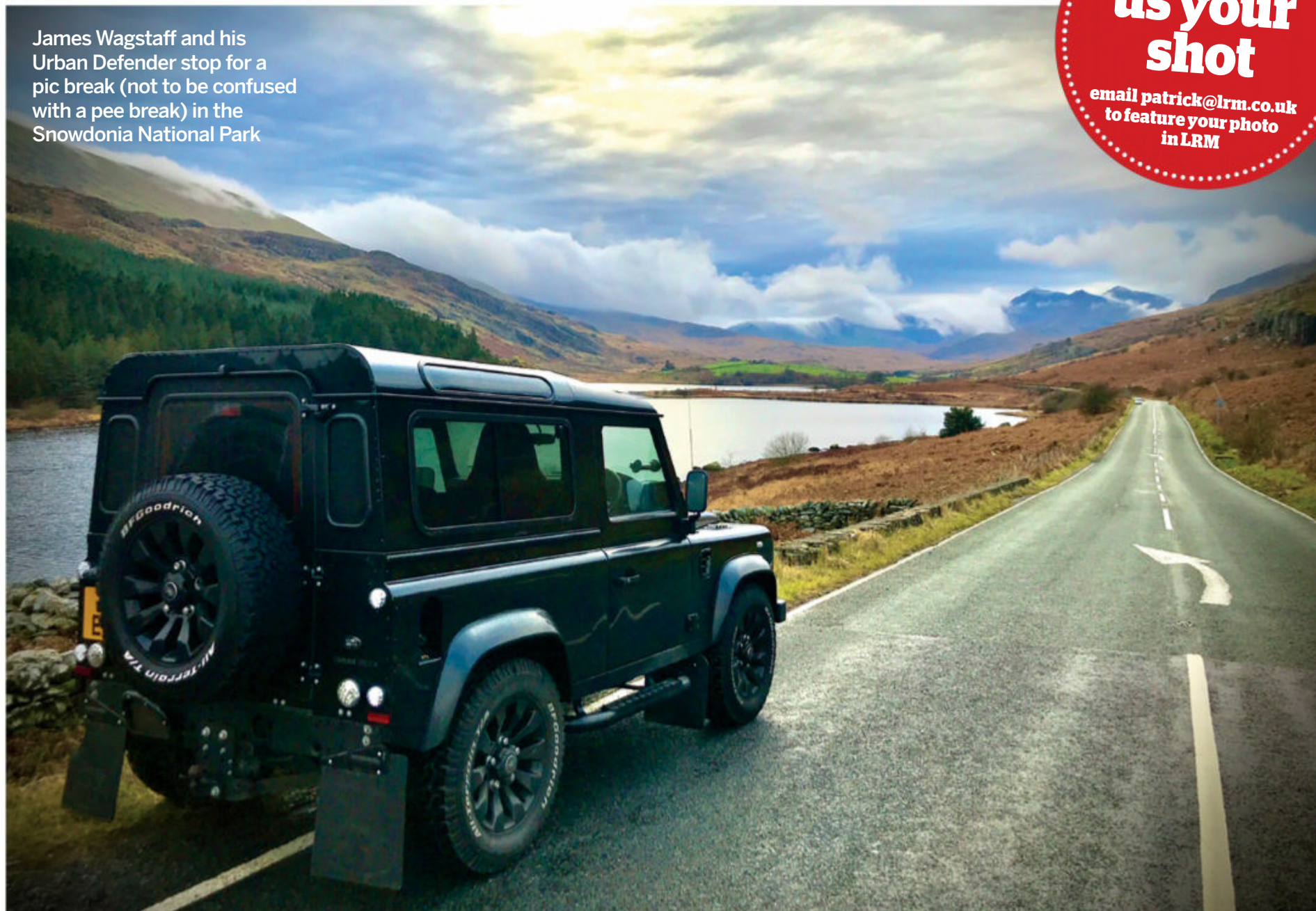


Logan Air rely on a Defender to get the show on the road at Kirkhill Airport on the Orkney Islands



David Paul tried to take a picture of his D4 without any rain in it while visiting the Spittal of Glen Shee in the Scottish Highlands. After a week he gave up

**Send
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James Wagstaff and his Urban Defender stop for a pic break (not to be confused with a pee break) in the Snowdonia National Park



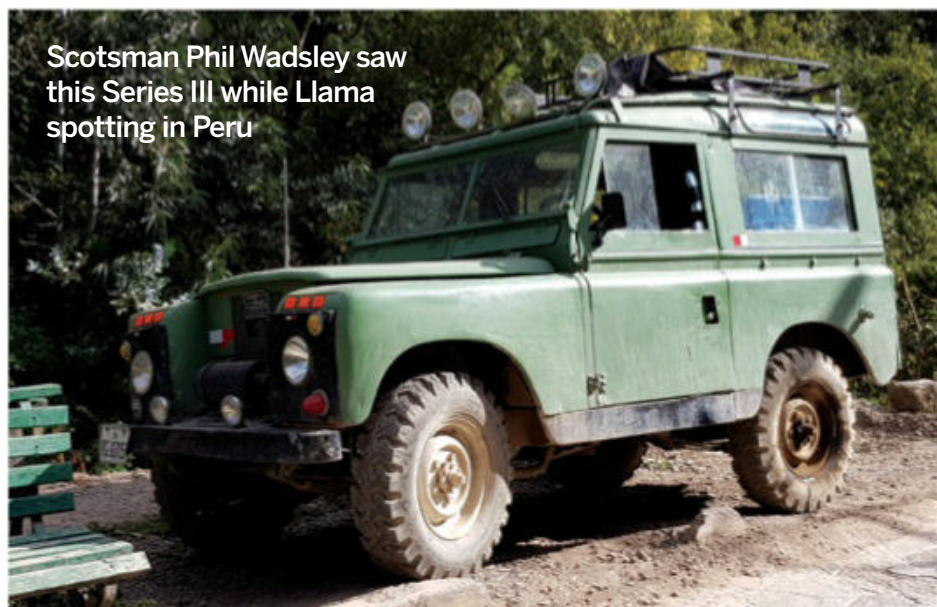
Sadly, this bar did not allow Lightweights inside



Silly grandad got me the wrong magazine. At least my other grandad got me a subscription to LRM. Guess which grandad is my favourite?



The Fox family out in the Shropshire hills – and no, they don't support Leicester City



Scotsman Phil Wadsley saw this Series III while Llama spotting in Peru



Jonathan Bertauche on the Fire Fighters Charity Run in Norfolk

YOUR PICTURES



Martyn Sharp on the Old Coach Road from Matterdale to Keswick



Tom Caffry and his 110 enjoying the first snow of the winter in North Yorkshire



Michael Coleby parked his 110 (aka Poj) under Harringworth Viaduct



Cheesy grins are compulsory in Switzerland as Chandler Gill found out on his third Xmas trip to see the family





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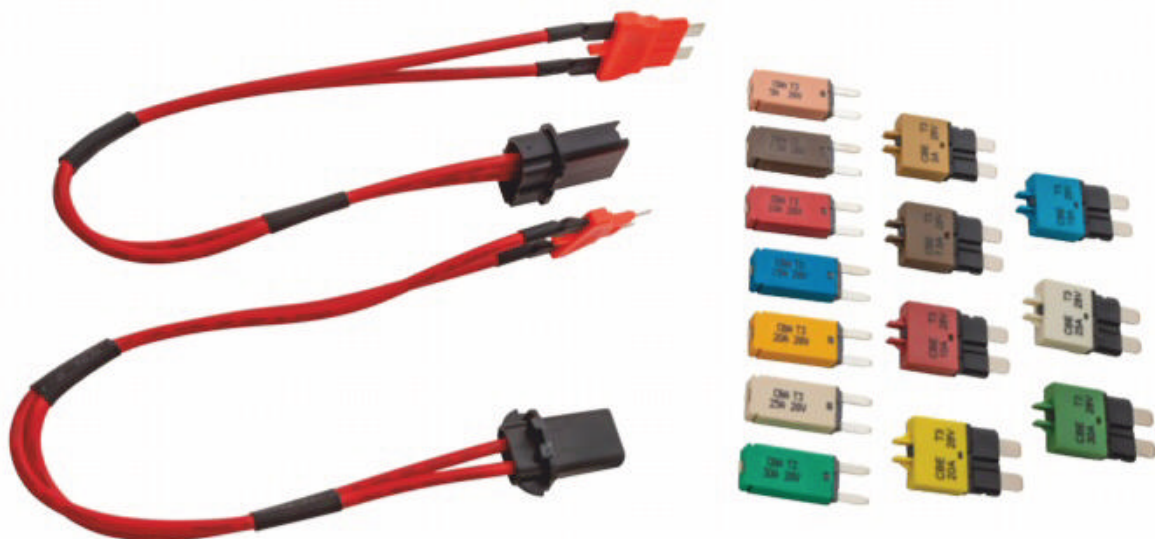
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PRODUCTS

SHORT CIRCUIT DIAGNOSTIC KIT

PRICE: £64.06 **CONTACT:** brit-car.co.uk

SAVE time when trying to trace the source of a short circuit with this clever kit. It contains a set of circuit breaker fuses that fit in the place of a traditional fuse. It will safely break the circuit during an overload. This is followed by a manual reset so you can test as many times as you wish. Sets for both blade sizes. Fuse range: 5A, 7.5A, 10A, 15A, 20A, 25A, 30A.



THREE IN ONE DETAILER

PRICE: £18

CONTACT: halfords.com

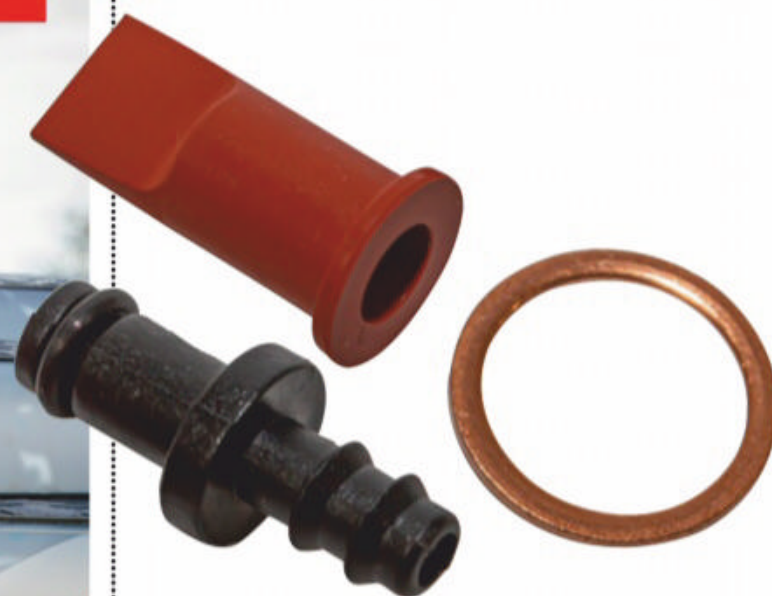
THIS three-in-one Turtle Wax Ceramic Detailer offers a safe, waterless cleaning option that will intensify the shine while adding ceramic wax protection.

ALL RISE PLEASE

PRICE: £184

CONTACT: allmakes4x4.com

YOU saw it first in the last issue of LRM, Terrafirma's stylish new raised air intake or snorkel. It's suitable for Defenders with a right hand wing vent, typically a 1994-2016 model fitted with 300Tdi, Td5, 2.4 or 2.2 Puma engine. It's manufactured from extremely durable, rotational moulded, impact resistant MDPE (medium density polyethylene). Won't discolour in harsh environments. Won't spoil the views. Draws air through stainless steel vents.



NON-RETURN VALVE KIT

PRICE: £14.99

CONTACT: island-4x4.co.uk

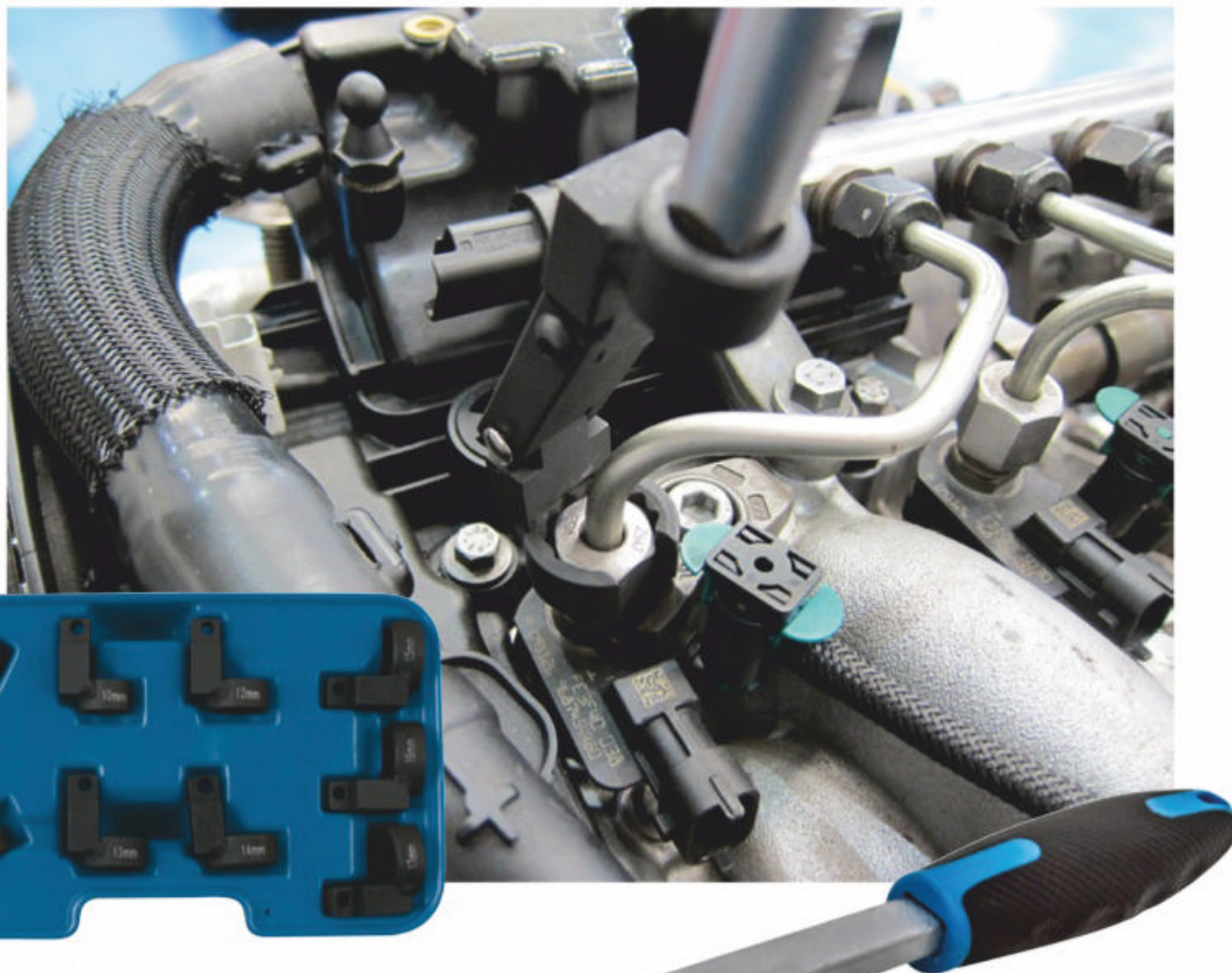
THIS Td5 fuel filter non-return valve repair kit will eliminate the problem of poor starting and running which is often caused by a faulty non-return valve in the fuel filter head. You don't have to replace the whole fuel filter head, just get one of these kits.

FUEL LINE SOCKET SET

PRICE: £166

CONTACT: lasertools.co.uk

THIS new socket set has been designed to help with improved access to those hard to reach fuel line connections. The tool is 3/8 inch drive and features two spring-loaded joints to let you get down and past any obstructions. The sockets are simply connected to the tool by pressing out the retaining pin with your thumb, fitting the socket, then replacing the pin. Will definitely save you time. There are eight socket sizes provided: 10 mm, 11 mm, 12 mm, 13 mm, 14 mm, 15 mm, 16 mm and 17 mm, all black phosphate treated for corrosion and abrasion resistance.



CERAMIC WASH AND POLISH

PRICE: £18

CONTACT: halfords.com

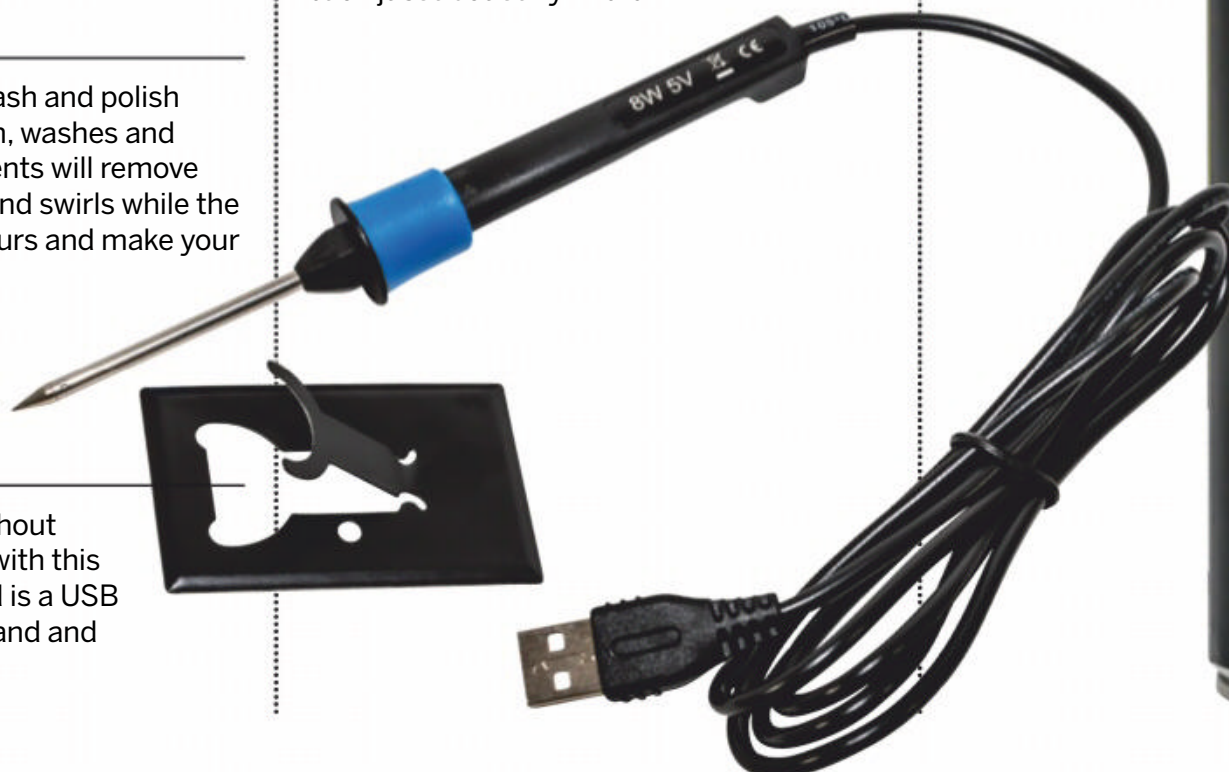
THE Turtle Wax ceramic wash and polish does what it says on the tin, washes and polishes. The polishing agents will remove scratches, imperfections and swirls while the wax will help enhance colours and make your Landy shine.

SOLDER VIA USB

PRICE: £11.85

CONTACT: eBay.co.uk

SOLDER on the go and without needing additional power with this soldering iron. All you need is a USB socket. Includes folding stand and 1.2 m USB cable.



BREAKER BAR

PRICE: £61.55

CONTACT: brit-car.co.uk

THIS bi-directional 330 mm long breaker bar has a built-in impact system allowing you to load the bar with one hand while impacting it with a hammer for significantly increased force. Thanks to its swivel head you can reach just about anywhere.

PROTECT YOUR BITS

PRICE: £30.42

CONTACT: johncraddockltd.co.uk

THIS 400 ml aerosol can of Raptor Protective Coating is great to touch up the protection on the vulnerable and hard-to-reach spots on your Land Rover such as the wheel arches and lower panels. Offers UV protection and is also water, chemical and abrasion resistant. Perfect for small jobs and different finish options available.



PRODUCTS



GENERATION Z

PRICE: Various

CONTACT: projectkahn.com

AFZAL Kahn, founder of the Chelsea Truck Company has just launched a range of automotive merchandise as part of his drive to target Generation Z. So, if you like the cars he is selling why not click on the website above to see their new range of hoodies, timepieces, caps and more.

TRANSFORMER DEFENDER

PRICE: £47.94

CONTACT: johncraddockltd.co.uk

HAVE a kid who is mad about Land Rovers and Transformers? The 1:14th scale remote control Defender can transform and drive with the simple push of a button.



DEFENDER MUG

PRICE: £15.50

CONTACT: eBay.co.uk

WHILE the mug might be made from bone china, the Defender pictured on it is not. Long may that continue.



INFLATABLE TENT

PRICE: From £1124.99

CONTACT: outwell.com

OUTWELL has just launched their new six-model Superior Air Collection of inflatable family tents. The moveable front panel offers users flexibility as it offers privacy and protection from the weather. The air system makes for quick and easy pitching. Loads of other great features such as silent doors, loads of places to hang stuff and darkened main bedroom.



SLEEP IN STYLE

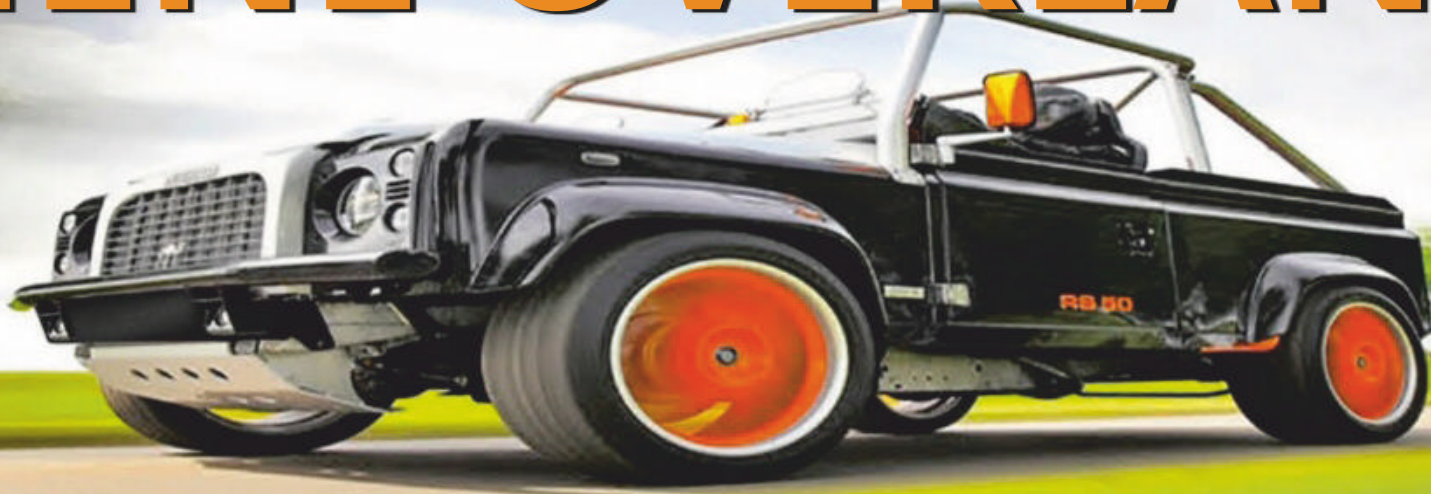
PRICE: £61.99

CONTACT: outwell.com

FEATURES of this Canella sleeping bag include: liner attachment points, heavy duty two-way Easy Glide zip with anti-snap zip guard and zip baffle, pillow pocket in hood and a cap compression sack to help reduce packed size even further when in transit. Has a comfort rating of 13°C and can be used in temperatures of up to -2°C. Weighs less than 1 kg.



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DAVE PHILLIPS

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When Britain ruled the world

REGULAR readers will know that I'm no fan of politicians of any persuasion, but I have to admit I have a sneaking admiration for our Prime Minister, Boris Johnson. Not because I agree with his politics, and certainly not because I approve of yet another privileged, Eton-educated toff getting the top job, but because he caught the mood of the British public.

In 2016, the majority of folk who bothered to turn out for the referendum voted to leave the EU. As we all know, the majority of MPs were in favour of remaining – and for over three years couldn't bring themselves to carry out the wishes of the British public. Their failure to do so was political suicide.

Boris, for all his faults (and they are many), detected the mood of the British people and acted accordingly. Ever the opportunist, he spotted a gap in the market for a leader prepared to carry out the voters' wishes. They rewarded him lavishly at the December election.

Thanks to the handsome majority he won in the Commons, we are leaving Europe. Now it's settled, all is mainly quiet on the Brexit front, although motor industry spokesman Mike Hawes has been a bit vociferous.

I have a lot of time for Mr Hawes, who is chief executive of the Society of Motor Manufacturers and Traders, whose stance on most issues I broadly agree with. But his political antennae aren't in the same class as Boris Johnson's.

Johnson has stated that he will seek the best possible trade deal for the UK with Europe, but will not rule out a no-deal exit. No surprises there: as any negotiator knows, to rule out any possibility is to weaken your own bargaining hand, but the SMMT sees the prospect of a no-deal Brexit as the worst possible outcome for manufacturers like Jaguar Land Rover.

In a press statement issued in December, Mr Hawes said: "European Automotive is deeply integrated and the benefits of free and frictionless trade have helped our sector become one of Europe's most valuable assets, delivering billions to

economies and supporting millions of livelihoods across the EU.

"A 'no deal' Brexit would have an immediate and devastating impact on the industry, undermining competitiveness and causing irreversible and severe damage. UK and EU negotiators have a responsibility to work together to agree a deal or risk destroying this vital pillar of our economies."

The way he talks, you'd be forgiven for thinking that EU membership has brought about some kind of golden era for the British motor industry. And that's a

"It wasn't just being a member of the Common Market that decimated the British car industry. Poor product development, weak management and out-of-control unions were to blame"

surprise, because he certainly has easy access to the facts and figures that show just how disastrously our native automotive manufacturing has fared during membership of the single market.

The British Parliament voted to join the EU (then called the Common Market) in 1972 and membership came into effect on January 1, 1973. The previous year UK car production had peaked at an all-time high of 1.92 million vehicles. Over half a million people were directly employed in the car industry in this country.

After 1973, the British car industry steadily declined, hitting an all-time low of 888,000 in 1982. Japanese manufacturer Nissan opened a factory in Sunderland in 1986, halting that decline. Today it is

Britain's biggest car maker.

According to the SMMT's own figures, today just 168,000 people are directly employed in the UK automotive industry.

During our membership of the EU, many famous marques that were once household names have disappeared. Names like Morris, Austin, Wolseley, Humber, Hillman, Sunbeam, Triumph, Jensen, Reliant, Singer, TVR – and of course Rover. Some of them aren't actually dead. The rights to the Rover name, for example, are owned by Tata Motors, but the likelihood of Rover saloons once again being the pride of Solihull's production lines is pretty negligible.

So is being a member of the EU with its "frictionless trade" essential to car manufacturing? The world's biggest car manufacturing nations, China (27,800,000 cars in 2018), USA (11,315,000), Japan (9,729,000) and India (5,175,000) would say no.

Germany (5,120,000) and France (2,270,000) were the only EU members in the world's top ten, according to figures for 2018 (the latest available). The UK, incidentally, produced a mere 1,604,328 cars that year, trailing in 14th place. In 1972 it was the world's fifth-biggest.

It wasn't just being a paid-up member of the Common Market that decimated the British car industry. Poor product development, weak management and out-of-control unions (in that order) were largely to blame. But EU membership did nothing to help – in fact the "frictionless" import of German, French, Italian and Swedish cars did much to hasten our car makers' demise.

The election result suggests that most Britons believe in Britain's ability to thrive outside the EU. Sadly, it appears JLR doesn't share their confidence, building a factory in Slovenia to build Defenders and Discoverys, which I and many others consider deplorable.

Will Boris lead us to the sunlit uplands of national recovery? Probably not, but at least he's capable of capturing the national mood. It's clear that JLR isn't.

■ Ex-LRM Editor Dave has driven Land Rovers in most corners of the world, but loves the British countryside best



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GARY PUSEY

The Enthusiast

Reasons to be cheerful

I'M always glad to get into January. Christmas is fun but if I'm honest I've never been a huge fan of the rather flat and uninspiring few days between Boxing Day and New Year's Day. In fact, before marriage and children came along I'd usually go back to work! I'm no longer quite that bad, although I do have a good mate who spent the afternoon on Christmas Day in the workshop putting the front wings on his current restoration project.

But January is a great month: it makes me cheerful and fired-up to get things done. And this time it's the beginning of a new decade which is always a bit special. Now, I wrote last month about how pleased I was with the completion of the Stage 1 88in prototype rebuild, but it was not long before it became clear that there was a problem with the gearbox. It was just about the only thing we didn't do any work on when we rebuilt the vehicle, because we'd decided to take a chance that with only 90,000 miles under its belt it would be okay. It wasn't, and just before Christmas we decided it had to come out. It's just returned looking nice and shiny and we spent an afternoon putting it back in. It now behaves as it should, the banshee whine has disappeared and it doesn't sound like it's about to eat its cogs.

The fully-functioning gearbox cheered me up so much that I decided this would be a good time to finish the rear PTO and pulley installation on the 1949 Series I, which we started over a year ago but for various reasons never got around to completing. It now works perfectly and I'm hoping to borrow a belt-driven sawmill in the spring, which will tick another little thing off my bucket list!

I'm also excited that 2020 is the 50th anniversary of the launch of the Range Rover, which hopefully means there will be some interesting birthday events and Range Rover themes at various shows. I know for sure that the Land Rover Legends show on June 6 and 7 is planning something quite unique. Meanwhile, my own Range

Rover restoration now needs a bit of a kick up the proverbial. It started two years ago which seemed more than enough time for it to be finished before the 50th but I kept diverting attention onto other projects. A New Year review of the Range Rover has convinced all concerned that, as Andrew in the body shop said: "We need to get a wiggle on!" I'll be kicking myself if it isn't finished in time for June.

I imagine the bosses at JLR are quite cheerful, too. They must be pleased with the overall response to their new Defender, although like many others I cannot fathom

"I cannot fathom why they would launch the vehicle in September but make the press wait six months before they can drive it. Are they hunting for gremlins?"

why they would launch the vehicle in September but make the press wait almost six months before they can drive it. Makes me wonder whether they are still hunting down some gremlins lurking in all that on-board electrickery.

Meanwhile, the new 90 and 110 were exhibited early in the New Year at CES 2020 in Las Vegas (the world's largest consumer electronics show), where they were introduced as "vehicles with the brain of a supercomputer". Peter Virk, who is JLR's Director of Connected Car and Future Technology, commented: "With one LTE modem and eSIM dedicated to the Software-Over-The-Air (SOTA) technology and the same set-up looking after music streaming and apps, new Defender has the digital capacity to keep customers

connected, updated and entertained at all times anywhere in the world. You could liken the design to a brain, with each half enjoying its own connection for unrivalled and uninterrupted service. Like the brain, one side of the system looks after logical functions, like SOTA, while the other takes care of more creative tasks."

JLR also announced that "the first new Defenders will feature more SOTA capability than originally projected. At its Frankfurt Motor Show launch in September, Land Rover announced that 14 individual electronic control modules would be able to receive remote updates, but the first production vehicles will feature 16 control units capable of receiving SOTA updates. Land Rover engineers estimate that in-dealer software updates will be a thing of the past for Defender customers before the end of 2021 as additional SOTA modules come online, rising from the current 16 to more than 45. A veritable tech fest, then!

JLR might also have started to turn the corner in terms of its sales and financial woes. The company announced that Land Rover sales were up by almost 10 per cent in December compared with the previous year. The company's overall sales were dragged down to an improvement of just 1.3 per cent by Jaguar, which was down by over 17 per cent compared with December 2018. Crucially, the Chinese market is showing strong signs of recovery, up 26 per cent year-on-year and the sixth successive month of double-digit growth.

And our final reason to be cheerful is that Professor Gerard Gabriel McGovern, Chief Creative Officer, Land Rover, was awarded an OBE by Her Majesty in the Queen's New Year Honours List for 'services to Automotive Design'. Hmmm, wasn't it one of his Freelanders that ensured HRH The Duke of Edinburgh wasn't injured when he had that shunt near Sandringham last year?

■ Gary Pusey is co-author of Range Rover The First Fifty, trustee of The Dunsfold Collection and a lifelong Land Rover enthusiast. What this man doesn't know, isn't worth knowing!





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Roving Reporter

Disco dating!

I'VE been asked out by a tall and handsome man who drives a Discovery. It's a first for me as, in general, I'm a bit of a Land Rover 'loner'. I've only ever had a couple of Land Rover-owning friends and have certainly never dated a fellow enthusiast.

When I'm waiting to be picked up outside the train station, out of the corner of my eye I see an enormous, flashy and distinctly smooth-cornered vehicle approaching and mentally write it off as an oversized SUV. But it flashes its lights and slows alongside me, and I see my handsome date behind the wheel.

Climbing into the passenger seat — which, to me, really seems to require a grab handle — I feel instantly dwarfed by the vast interior. My handsome date is a big guy, so it's a good fit for him, but for the more diminutive likes of me, everything seems oversized, including the seats.

The last time I was in a Discovery was when I had to drive my (drunk) friend Julian's 2001 vehicle through a wood, some years back, in Sweden. That was a spacious enough vehicle, but the interim 16 years of design have rendered this seven-seater 2017 Discovery a much more enormous and luxurious affair all round, with a strangely quiet engine.

My date pulls over to tap the restaurant address into the Discovery's in-built sat nav system and switches on the interior lights, which illuminate the entire vehicle. Glancing behind me, I count no fewer than six internal lights, which seems excessive. But excess is the name of the game with the Discovery.

When we're out on the road, I notice it's an automatic, which seems a bit odd for a 4x4. Multiple colourful illuminations stretch across the dashboard and the ensemble makes it feel rather like a mobile disco. Disco by name, disco by nature. But at least there's something comfortingly familiar to the throb of the engine when we pick up speed on the dual carriageway.

My date is charmingly enthusiastic about his vehicle. He apparently grew up around Land Rovers and his father has a much older Discovery. But for me, having comparatively little interest in vehicles

beyond Series Land Rovers, it's a little showy. I also can't help but mentally compare his Land Rover to my own. Even with a most unfair 40 years and God knows how many design progressions between them, my Lightweight remains an unbeatable classic.

When we arrive at our destination, neither of us can quite believe that the grim little suburban shopping precinct is really where we're supposed to have a romantic meal, although such are the hazards of on-spec internet restaurant booking. The inbuilt sat-nav is quite tardy so we suspect it has misdirected us. My date pulls over to double check the address, which confirms that the quadrant we just abandoned was indeed our venue. The engine (which I hadn't noticed had

"The heated seats are lovely, if a little disconcerting, when they start generating a pleasant but curious sensation of warmth in unexpected places"

even stopped) suddenly restarts, as if it's haunted, and I start to realise the extent of motoring progression that has completely passed me by.

We emerge, laughing, from a distinctly mediocre dining experience, to hasten back across the chilly quadrant to the Discovery, where curious pools of light appear on the ground by each door, as if we're about to be beamed up by some alien spacecraft. My date insists they are very useful and points out that in the centre of each spacecraft illumination is the delicate outline of a Land Rover. Impressive attention to detail.

England's weather doesn't do first dates any favours. Despite bitter cold, we motor down to a local park for a moonlit walk, and emerge into the frigid night. What, in any other country, could be a romantic stroll, here is reduced to a very brisk walk, just to keep warm. The increasingly remote possibility of a kiss is further arrested by the sound of rap music emanating from a group of hooded youths occupying a playground, whose desire for a little Friday night freedom obviously overrides the extreme cold. We stride back to the car park.

It's a relief to be back inside the Discovery and the handsome date presses a button and says, winningly: "It's got heated seats."

Now, this is a luxury I can appreciate, as I'm always cold. And the heated seats are lovely, if a little disconcerting, when they start generating a pleasant but curious sensation of warmth in unexpected places, which then suddenly feels alarmingly too hot.

The Discovery, with its assortment of entertaining illuminations and features, added an interesting dimension to what was actually a very fun evening. But, on the way back to the train station, I discover its internal layout is about as conducive to dating as the British climate.

Firstly, its interior is so vast, driver and passenger are very far apart. Then there are the weird arm rests, of the ilk found on public transport, rendering even a goodbye kiss largely impossible. Even if the armrests are retracted, the large padded box unit between the seats is a further impediment and, with great effort, all that can be managed is a rather awkward and uncomfortable farewell peck on the cheek.

Although the volume of a 1977 Lightweight's engine makes conversation largely impossible over 40 mph, except via bellowing, I believe its compact size and associated proximity of driver and copilot make it overall better suited to romance than the 2017 Discovery.

■ Thom Westcott is a British freelance journalist who has written for the Times and Guardian, and now mostly spends her time reporting from Libya.



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JACK DOBSON

Dobbo Down Under

Welcome from Queensland

THIS month's column comes from Queensland. Somehow managing to evade the bush fires that are currently ravaging Australia we made our escape from the nation's capital a little over a week ago. Leah and her brother took Bruce our Defender, whilst I took to the wheel of a rental truck (which may or may not have been crammed with more Land Rover parts than actual home wares).

An issue with the booking meant I had to return the truck to Canberra. With temperatures by now hitting over 40 degrees and winds fanning the fires, several roads were closed forcing me to take a longer, inland route back. By the time I reached Canberra, having covered 2500 km in just four days I was in no state to drive Grandma back up, so I opted for an overnight stay in a fairly grim-looking hotel on the outskirts of the city.

Not daring to leave too early because of kangaroos I set off at 5:45 am on Christmas Eve. Despite my best efforts, I suspect most of the hotel guests were woken by the roar of Grandma's V8 bursting into life.

According to the NSW Rural Fire Service App the Hume Highway had reopened which meant I could take my preferred (slightly cooler) route near the coast. With 1200 km to go I estimated it would take around 14 hours allowing for fuel stops and leg stretches.

Thinking about it, the seating position and legroom of an 88 in is similar to economy class on a long-haul flight, but without the luxury of being able to sneakily recline your seat.

Two and a half hours into the trip and on the outskirts of Sydney it was time to get fuel. As I took the slip road I applied the brakes and found a concerning amount of travel. A check under the bonnet did not reveal any obvious issues like a low fluid level or leaks. Confident I was not about to

lose my ability to stop, I decided it must just be that the brakes needed adjusting – a job I could put off a little longer. Back on the road and I thought I would listen to some true crime podcasts. No chance. I could not hear a thing.

With stops every two and a half hours I continued my way up towards Brisbane. It is a long old way no matter what you are driving. Using GPS I tracked my speed and distance. I was averaging 110 kph (70 mph) on the dual carriageways. Not

“Not wanting to enter a debate on contributing factors to climate change I will not be sharing my fuel economy calculations”

wanting to enter a debate on contributing factors to climate change I will not be sharing my fuel economy calculations.

We arrived in Brisbane in the early evening and no sooner had I parked up, a huge storm struck. With the slightly pathetic windscreen wipers I was grateful we managed to avoid that deluge!

A few days later and we were back on the road heading to Teewah Beach, which is just south of Fraser Island. There, we met up with several other Instagrammer Land Rover guys and girls. Our group consisted of four Defenders, two Perenties and my Series. Our group attracted several other Landy owners and it was great to have a chat.

With a permit you are able to drive right

along the beach, which is really quite special and definitely something I plan to do more of now we live up here. This was the first time I had taken Grandma on the beach and we did not get stuck (none of us did).

There was one section I tackled in low range but then neglected to push down the yellow knob after shifting back to high-range so I actually did a large portion of beach driving in rear wheel drive (shush, don't tell anyone!). Certainly having that extra V8 grunt helps when you feel yourself losing momentum but it is not all about power and speed. The skill is in picking the right route and being committed (selecting four-wheel drive also makes it easier). Brilliant fun provided you do not clash with any of the Toyota / Nissan crew.

We camped on the beach for two nights and, again I was reminded just what little space you have with an 88.

Thinking out loud, I wonder if perhaps I should make my 109 our weekend camper. There is plenty of space in the back to have a mattress and I think I could come up with some neat storage solutions. But then, if I do that, would I miss the carrying capacity which has been so useful in recent weeks?

This discussion may of course be immaterial since I do not currently know the whereabouts of Old Girl. She should be coming up to Brisbane on the back of a transporter — I dropped her off over a week ago and there have been no updates. It honestly makes me feel pretty anxious when I hand the keys over to someone else. Will they know how to gently put her into gear? What if they try and open the driver's window — will they know to catch the window runner as it falls out? I am getting anxious just thinking about it . . .

■ When Brit Jack Dobson emigrated to Australia in 2010 he took his passion for Land Rovers along with him.



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The last real Landy?

The Discovery 3 is a great vehicle but its time has not yet come, reckons Philip

BACK in late 2016, when we were still struggling to get our heads around Gerry McGovern's 'genius' design of the Discovery 5 (yes, I am being sarcastic here), I idly wondered in these pages whether the Discovery 3 might come to be regarded as the last real Land Rover, as you and I would understand it. And I think I've just bought the perfect example to prove that hypothesis.

The colour in itself is quite unusual – Maya Gold – but what makes this particular Discovery exceptional is what it doesn't have rather than what it does. The specification is as basic as you could get with a D3: coil springs instead of air, 17 inch alloys, cloth seats and manual transmission. It doesn't have sat nav or posh headlights. It's also a 2.7 diesel. Perversely, it's the poverty spec that makes it so special.

My main reason for buying it, however, was that it's the oldest road-legal D3 known to survive – there may be one other

slightly earlier example out there, but no one knows where it is. And it was being sold by my mate Chris Bishop, who had bought it from one of his customers. Chris had been trying to sell it for about a year, and finally put it on eBay; trouble was, the high bidder didn't appreciate it for what it was – he just wanted a coiler to off-road – so Chris suggested I put a fractionally higher bid in, to ensure its survival. I ended up buying it for just over £5000 – with my own money, not the Dunsfold Collection's – which is a lot for an old Discovery 3, but then it's an interesting vehicle.

VX04 DFA (chassis number 000271), was built on May 25, 2004 and despatched on June 24 to Yeovil Land Rover in Somerset. That suggests it wasn't used for the global press launch of the Discovery 3, which was held in Scotland, and Land Rover official photographer Nick Dimbleby doesn't have any pictures of it. So, why was it built to that spec, and what was it used for? Unless a LRM reader can help, we may never know.

Whatever its early history, it's been well

looked after by its four previous owners. It's been properly serviced, the belts have been changed and the clutch done. As soon as I got it home, I put it up on the workshop ramp and was amazed how clean it was underneath. It really is a nice, genuine, unmolested car.

I know that the last-but-one owner was a horsey lady who towed a horse-box with it, and the click-in tow-hitch is safely stored away under the boot floor. I'd strongly advise anyone who has a similar removable hitch to do the same: a thief can break the locating pin by using a bit of muscle on a strong pair of grips and twisting the hitch in its socket. There's been a spate of thefts in my neck of the woods and you can understand why when the cost of a new tow-hitch is £300-400.

VX04 drives really nicely, although it seems very, very strange having to shift gears manually in a D3. The coil suspension feels little different to an air-sprung set-up, although it would be a different story when towing, since the coils don't have the self-levelling capability of the air springs.



Test mule D3 has can of Red Bull in cup holder...



...possibly a relic from its endurance testing in 2003; note jig mounts welded onto chassis rails



Philip's newly-acquired D3 is a rare base-spec model, with 17 inch alloys and manual transmission



Removable tow-hitch is stashed under boot floor



Seat covers are a useful addition to a tidy interior



Dunsfold owns this 2004 launch car, chassis 473

And I do miss the Access mode of air suspension, whereby you press a button to lower the vehicle a few inches, which makes getting in and out so much easier.

We already have another early Discovery 3 in the Collection, this one an actual launch car but a slightly higher chassis number, 000473. KW04 UKR is finished in dark green and was loaned to the West Midlands Fire Service for evaluation as a

commander's vehicle after the press launch, and then was used internally at Solihull as a ferry vehicle before being gifted to the Collection in 2006. I put around 30,000 miles on it on Collection business back then, including towing other vehicles to events, but it came off the road in 2012 when age started to catch up with it. To make it MoT-able, it needs some jobs doing – the wiring loom is throwing up faults due to corrosion in the plugs, and there's a rear injector blowing on the cylinder head, which is a body-off job to fix – but it still starts and runs if we need to move it, and that'll do for me!

One D3 in the Collection that will definitely never be on the road again is the prototype camouflaged vehicle, chassis L319-CP172. Built in 2003, it is a typical test mule; one of the cup-holders has been adapted to hold various switches and plug sockets, while the other still has an empty tin of Red Bull that was there when we acquired it! Maybe I should check the date stamp on the tin; it's all part of the history, after all. This vehicle barely runs and drives,

and is not even that easy to get on a trailer because it has lumps of metal welded beneath the chassis rails for mounting on a test jig. But it is the oldest surviving Discovery 3.

Dunsfold trustee Richard Beddall also has an early D3 that's on loan to the Collection, and coincidentally it's Maya Gold like the one I've just bought, and a pretty close chassis number: 000296. However, Richard's vehicle is a petrol V8 and to a much higher spec – so, while it may seem like overkill to have two Maya Gold D3s in the Collection, they do at least make an interesting contrast.

Richard's D3 was loaned out for a JLR media drive recently, but none of the journalists wanted to drive it – to them, it's just another D3, much like any other that you can still see driving around today. You can imagine them thinking, what's so interesting about that?

It's a bit sad, really, that the Discovery 3 seems not yet to be recognised as a classic in its own right. Will that situation have changed in another three years, I wonder?





Electrickery

ARE you afraid of your Land Rover's electrics? Many people are. One glimpse of the multi-coloured spaghetti behind the instrument panel and they run away

screaming. Dave the landlord, who was in the motor trade before I was born, tells me that there are only two things that frighten him: electrics and gearboxes. I pointed out to him that his Range Rover P38 has an electrically-controlled gearbox and I think I rather spoiled the pleasure of ownership for him. The Rangie is now up for sale.

Personally I love working on vehicle electrics. Give me a Series III and a new Autosparks wiring loom to install in it and I'll be as happy as a pig in muck.

Mysterious electrical faults? Let me at 'em, multimeter in hand. There are a couple of electrical jobs I do not especially relish, but those are just down to access issues. The front end lighting loom on Defenders terminates in a bundle of corrosion-prone

bullet terminals tucked away behind the headlamps and almost impossible to work on without taking the headlight bowls out. And at the other end of the same vehicle, the aluminium panels which cover the tail light wiring are, on a Station Wagon, almost impossible to remove without taking the bench seats out.

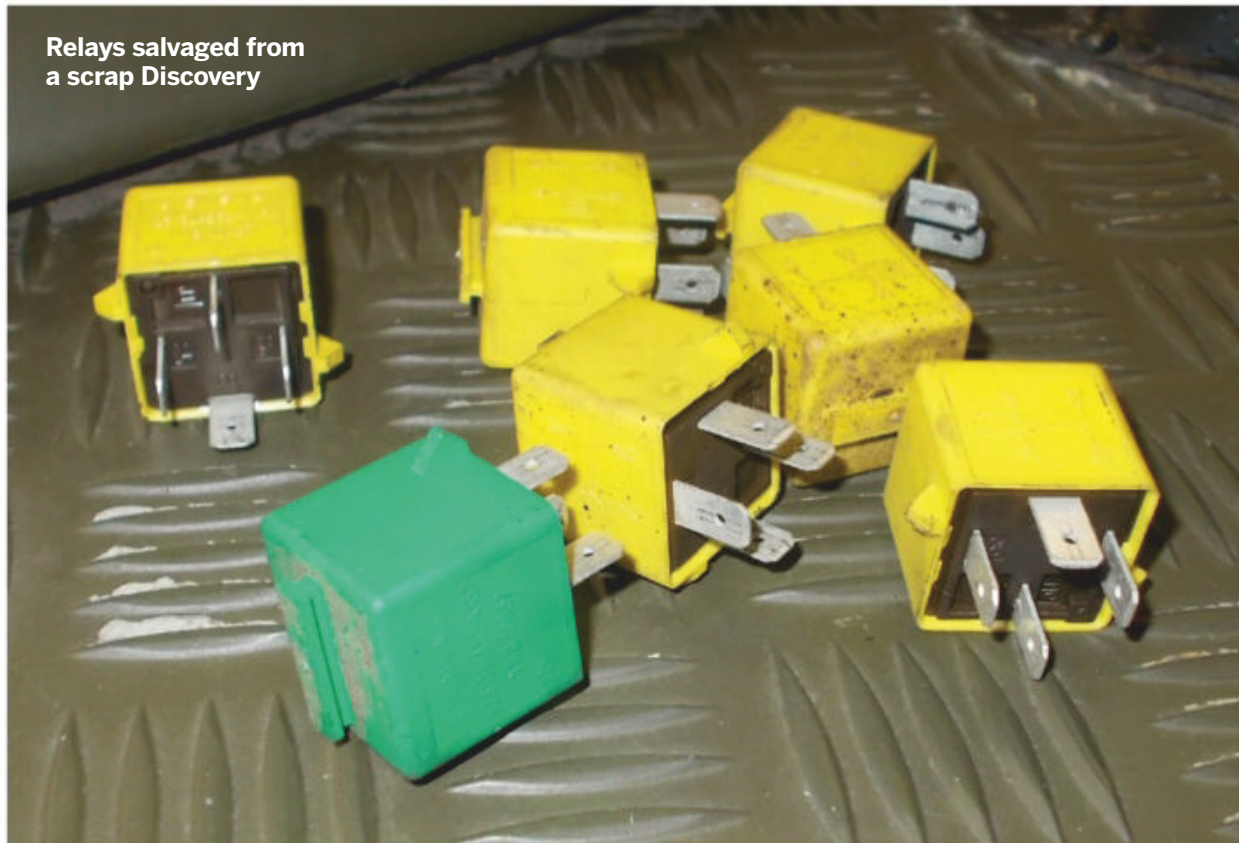
Most of the electrical problems I see are caused by one of three issues: deterioration of components and connectors due to sheer old age, corrosion due to water ingress, and outrageous bodgery by people who really ought to be prohibited by law from working on their own vehicles. Older Land Rovers will typically contain examples of all three types of fault: faced with a variety of non-functioning electrical items the only solution is to patiently work through each in turn, referring to the wiring diagram for the vehicle as required. This can be very time-consuming, so when I was trying to squeeze in one more job before Christmas (a 200Di engine conversion on a Series III) I was delighted

to be told that the vehicle had already been fitted with a new wiring loom.

There is 'new' and then there is 'new to this vehicle'. They are not the same thing. This loom was missing much of its protective tape wrapping and had replacement connectors and random lengths of coloured wire liberally scattered through the engine bay and behind the dash. The vehicle had started life with a petrol engine but had been fitted with a 2.25 diesel at some point: the replacement wiring loom was for a diesel, but hacked about to work with the original ignition switch. The correct diesel switch has an intermediate position between 'on' and 'start' which operates the glowplugs. On this vehicle the glowplugs were wired through a separate push-button which took its power via the ignition switch. Four glow plugs can draw as much as 50 amps peak current when first activated, and putting that kind of current through the contacts on a petrol ignition switch might be described as pushing your luck. I had noticed a burning smell when the glow



Relays salvaged from a scrap Discovery



Stop solenoid caused a mysterious fault



plugs were energised, and no wonder.

So I needed to sort out some more sensible glow plug wiring. The ignition switch itself looked to have been bodged (now there's a surprise) with a wire soldered to one of the contacts in place of the original spade terminal. I wasn't at all happy with the switch action: there should be a distinct notch between each of the switch positions (off, auxiliary, on and start) but the switch was so badly worn that the positions were almost impossible to find. I had a rummage around and dug out a good Series III diesel lock barrel and switch, which solved one problem (the glow plugs) but introduced another. The 2.25 diesel engine has a purely mechanical injection pump, with a pull cable to stop the engine. The 200Tdi has an electrically-operated stop solenoid, powered by a 12 volt switched feed (ie. one which is 'live' when the ignition switch is in the on position). All very simple, except that the Series III diesel ignition switch cuts off all switched feeds when the starter is operated. This reduces the load on the battery, but means that if you wire the injection pump direct to a switched feed, the engine won't fire up on the starter.

I have seen numerous ways in which people have got round this problem, ranging from connecting the pump direct to the battery via a toggle switch, to replacing the ignition switch altogether. The switch from a Ninety or One Ten diesel will fit the Series III lock barrel, or the complete lock and barrel assembly will bolt straight onto the Series III column. The original lock barrel is held on with shear bolts which will need to be drilled and removed with a bolt extractor. The switch itself is secured to the lock barrel with two tiny screws, at least one of which will drop down behind the dash when removed and will never be seen again. If this all sounds like too much work, what you need is a relay.

Relays are great. Think of them as power-operated switches. A typical automotive relay will handle 30 amps with no problems: the current required to switch the relay is minimal, and the relay

itself is far more reliable and durable than a typical Land Rover on-off switch. There are some switches on older Land Rovers which have a habit of burning their contacts and failing – brake light switches and headlamp dip switches are the worst offenders – and it makes a lot of sense to route the current on these circuits through a 30 amp relay, using the original switch to operate the relay.

The most common types of automotive relay are on-off (four terminal pins) and changeover (five pins). Every time I acquire a rotten Discovery as an engine donor I pull out all the relays before sending the vehicle off for scrap. Four pin relays are yellow, five pin green, and I now have lots of them. Provided they have not got wet they always work. For this particular job I needed a five pin relay. If you examine the relay closely you will see that the five terminals are numbered: 30, 85, 86, 87 and 87a. Pins 85 and 86 are used to switch the relay. With the relay 'off' pin 30 is connected to pin 87a: with it 'on' 30 and 87 are connected. To make your 200Tdi run, connect pin 30 to the injection pump, 87a to the switched, unfused side of the fusebox (white wires), 87 to the unswitched side (brown wires) and 86 to earth. 85 needs to be connected to the starter wire on the ignition switch (white and red) via a piggy-back connector.

You now have a 200Tdi which will start when you turn the key, and stop when you switch it off. Except that the one I was working on wouldn't stop. When I turned the key to the 'off' position the charge warning light glowed brightly and all the electrics stopped working, but the engine carried on running until I pulled the connector off the stop solenoid on the injection pump. I have had problems before with 200 Tdis running on when switched off, but these have always been caused by debris within the stop solenoid itself, preventing it from shutting off the fuel supply. That was not the problem I faced here.

I experimented a little further and found that the engine would stop if I removed the bulb from the charge warning light. This bulb is part of what I would describe as a

'balanced' system: on one side is the regulated output from the alternator, on the other side the vehicle electrical system voltage. With the engine running and the alternator charging properly, the two voltages will be identical and the light will stay out. If the alternator develops a fault, the vehicle system voltage will be higher than the alternator output voltage, so the light will come on. Conversely, when the ignition is switched off, for a short time (until the engine stops turning) the alternator output voltage will be around 14 volts, vehicle system voltage nil, which is why the charge warning light glows briefly when you switch off your engine.

With the ignition switched off and engine still running I measured the voltage on each side of the bulb and got around 14 volts on the alternator side (exactly what you would expect from a healthy alternator) and just 1.3 volts on the ignition side. There was no way (I thought) that such a low voltage would be enough to activate a stop solenoid rated at 12 volts, so I spent a bit more time looking at other possible causes for the engine refusing to stop. In the end I had to conclude that the fault lay with the stop solenoid. I can only guess that the spring on the plunger inside the solenoid had become weakened with age, allowing the solenoid to operate at a fraction of its normal rated voltage.

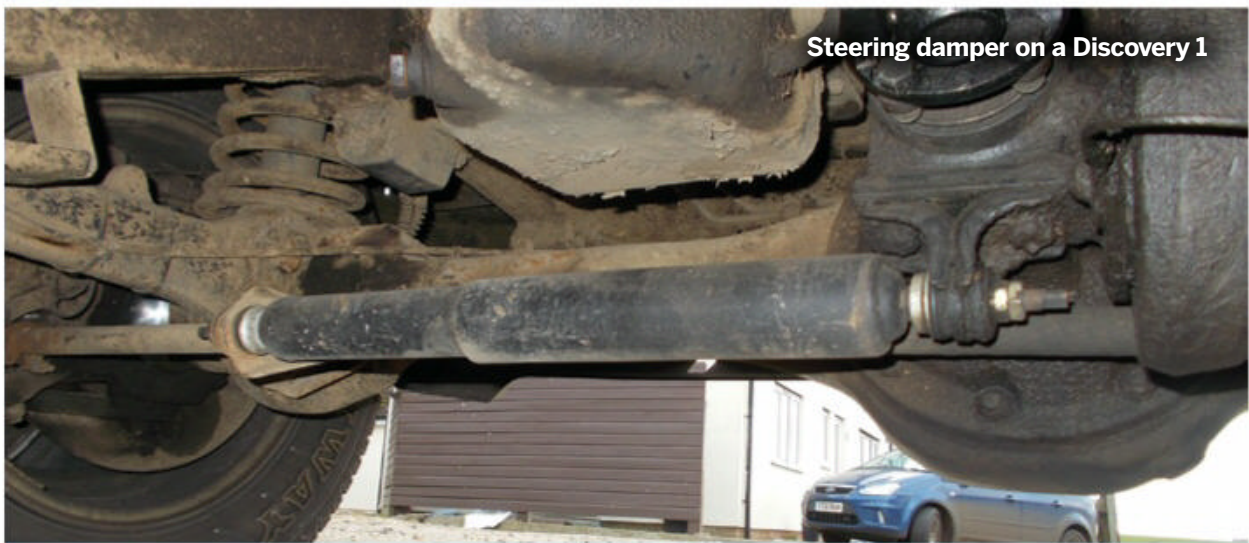
On the 200Tdi and 300Tdi engines the stop solenoid screws into the distributor block at the back of the injection pump and can be undone with a 24 mm spanner. Changing the solenoid is not difficult, but access is poor: unless you have a very unusually shaped spanner you will need to remove the bracket on the back of the pump which supports the accelerator cable. This is held on with two Torx and two Allen bolts, all of which are very tight and easy to round off. Use a close fitting drive bit in perfect condition, and remove the injector pipes to get straight-line access to the bolt heads. It was Christmas Eve and I was in a hurry to get the vehicle ready for road test, so I was careless and rounded off the head of one of the Torx bolts. The stubborn bolt then defied every attempt to

remove it, including Irwin Bolt-Grips. An hour later I was on the point of having to give up and remove the pump so that I could tackle the job on the bench: as a last resort I cut a slot across the head with a disc cutter, took an old stubby screwdriver with a square handle, put a big spanner across the handle and turned. The bolt came undone, just like that.

I had a few other electrical problems to sort out (mostly bad earths) but soon had everything working apart from the temperature gauge, which had fallen victim to 'I'm sure I had one of those somewhere' syndrome. The vast majority of Discovery 200Tdi engines have a temperature sender with a very fine thread and a green insulator. When connected to the Series III temperature gauge the needle will barely move off the bottom stop. The Range Rover Classic 200Tdi has a sender which works perfectly with the Series gauge (part number AMR1712) but this is now obsolete and hard to find. The best solution is to use the Series temperature sender with a fine thread adapter (ERC8973) which I thought I had on the shelf, but could I find it? No doubt it will turn up at some point, but meanwhile I had a vehicle waiting to go, and I don't like road-testing new engine conversions without a working temperature gauge, for obvious reasons.

There is a way around this and it is one I have used a few times now. The Series temperature and fuel gauges are designed for an operating voltage of 10 volts, and are fed power through a simple voltage regulator (a rectangular tin can mounted behind the speedometer). This is a hangover from the old days of dynamo charging, when the electrical system voltage would vary quite dramatically according to the engine speed and how many electrical items were switched on. An alternator-charged system will normally maintain a constant 14 volts or so with the engine running, pretty much regardless of speed or load. I discovered a while ago (by experimenting with a temperature gauge, sender unit, thermometer and kettle) that if you run the Series temperature gauge on normal vehicle voltage (ie, with the regulator bypassed), the gauge will work perfectly with the Discovery sender, giving a gauge reading bang in the middle of the scale at normal operating temperature. The gauge will read low if the alternator stops charging, but that is the only disadvantage I can think of. Just pull the light green wire connector off the back of the temperature gauge, make up a short wire with a spade terminal on each end, and connect the temperature gauge direct to the input (dark green) side of the voltage regulator, where there should be an unused male spade terminal unless someone has been there before you and connected something else to it.

In the end I didn't get the Series III on the road for Christmas; the last few bits and pieces had to wait until after the holiday festivities. If I hadn't rounded off that bolt I might just have got it finished, but sometimes it is better just to put down the tools, go home and enjoy a bit of rest.



Steering damper on a Discovery 1

Steering shimmy

THE notorious Land Rover steering shimmy or shake is something of which I have long been aware, but despite having spent more than 30 years driving long distances in ropey old Land Rovers I had never experienced it for myself until a remarkably well-preserved 1993 Discovery came into the workshop for a full service and MoT test. Neither the service nor the test picked up anything untoward in the steering or suspension: I rang the owner to let him know the vehicle was ready, and he told me he had forgotten to mention a steering vibration at high speed which he thought might be an unbalanced wheel.

The roads around the Norfolk Garage are not really conducive to high-speed road tests, especially in wet weather. There is one section near the workshop about a mile long which is dead straight but bumpy in places: it is good for 60 mph provided there is nothing coming the other way. I wound the old beast up to around 55 and was just starting to think the vibration was nothing to worry about, when the nearside front wheel hit a small pothole and all hell broke loose. The steering started oscillating rapidly from side to side so violently that I could not hold the steering wheel steady. I backed off the throttle but the wheel kept see-sawing until the speed dropped to around 45 at which point everything returned to normal.

Back at base I jacked up the front of the Discovery, put a pair of stands under the front axle and started to investigate. If you look up 'Land Rover steering shimmy' on the Internet you will find a huge amount of information on this subject. The most common cause is a worn component (or more than one) somewhere in the steering system or front suspension, anywhere between the steering box and the tyres. This particular vehicle had enjoyed a very quiet life on a country estate and I could not find any play in the steering swivels, track rod ends, steering box or panhard rod bushes. My attention turned to the steering damper. This is an oil-filled telescopic damper (like a shock

absorber) mounted horizontally between two brackets, one on the track rod and the other on the front axle.

Normally when a steering damper fails it is because the seals have worn out, resulting in the oil leaking out of it. If the casing is damp with oil, the damper is dead. This one looked clean and dry although the rubber bushes were perished and the casing surface rusted. There is only one way to test one of these dampers, which is to unbolt one end and then see whether there is even resistance when the free end is pulled in and out. The test revealed that this damper had a 'dead spot' with no resistance about an inch either side of the straight-ahead position. I suspect that it was the original item from 1993. It went in the bin, and with a new damper fitted I repeated the road test. This time the steering remained thankfully wobble-free.

Later versions of the classic coil-sprung front axle seem more prone to steering shimmy than the earlier ones. The original 1970 Range Rover design used a plain pin and bush at the top of the steering swivels, which provided a certain amount of friction damping. From the mid-1980s a new design with roller bearings top and bottom appeared on the Range Rover: the Discovery had this swivel design from the start, but the Defender retained the plain top bush until the start of 300Tdi production in 1993. The twin-bearing design has far less friction than the older one even when new, and can become very loose indeed when a little bit of wear gets into the bearings. If you have a steering shimmy with no obvious cause, detach the track rod and drag link from the steering swivels and check the preload using a spring balance as per the workshop manual. If the bearings are undamaged the correct setting can usually be obtained by playing about with the number and thickness of the shims under the top swivel pin. If the bearings feel rough (quite common due to oil loss or water ingress) the swivel assembly will need rebuilding.



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WE all love buying bits for our Land Rovers. Something added here, a little extra there, that's how we modify them to become our dream car. But what if, rather than slowly add them bit by bit, instead you stockpiled

all you needed and hit the workshop – driving in with the parts in the back, and driving out in your dream Defender with everything fitted. Possible? Definitely, and LRM wants to show you not just how to go about it, but how to make sure it all goes smoothly.

BEFORE:

One standard Defender,
one pile of shiny parts



THE THEORY

1 Decide what you're doing

First you need to have a clear idea of what you're trying to achieve. Whether it is a Camel Trophy replica, ARC trials car or overland camper, you need to do some research. If modifying a car, then LRM feature cars and advertisers, shows or even club meets are all worthy of time spent investigating, or chatting to others about. By immersing yourself in research, you can benefit from how others have done certain things, and avoid potential mistakes. If there's a proven suspension set-up or combination of winch and bumper, then consider those, rather than invent a set up where elements are fighting each other. If something is popular, there's usually a reason for it, so learn from them. Equally, you may want to put your car back to Lode Lane standard, in which case hit the old sales brochures and Dunsfold Open Weekend to ascertain exactly what 'right' should be. Inspiration is everywhere, choosing your transformation is a big part of the fun.

2 Start it right

We're going to be doing this once, not coming back to the spanners in a fortnight. Spend time first making sure the car is as good as it can be. There's no point fitting tasty brake discs and pads if the caliper pistons need a service, or the master cylinder is leaking. With a fully-sorted car, the work is simpler and you'll be able to properly assess a before and after, heightening the transformation effect. If you're cutting any bodywork, think about paint; are you touching it in yourself, or does it need attention in a professional bodyshop?

3 Think it through

So you've decided on what to fit, how is the work to be done? If you're doing it yourself, then make sure you have all the right tools, lifting equipment, consumables, and know the processes. If going to a professional garage, talk to them first to help them understand what you're aiming for, and listen for their input, too. This leads us to another point, in that for the transformation to work, you need to know every single part needed, vitally, having them to hand. With the axle stripped on stands, the last thing you need is to find you suddenly need a handful of fixings, washers or a one-of-a-kind seal. Try and have a plan for if you do need something. Know where to go, when they are open and check on stock before going.

We should also talk about timings, too. For although our fictional transformation is over a weekend, you should never work on a car against a time limit. Land Rover maintenance isn't a race, and time restraints will only lead to corners being cut or accidents, so whilst you may have a time frame in mind, don't be a slave to it. If you do hit a problem, take a break, and come back to it when you can overcome it, or a friend who can is free. By all means have an idea how long it will take, but let the car rule the work, not the clock.



Story and pictures: Alisdair Cusick

AFTER:

Standard parts gone, shiny parts on, in just a weekend





4 Stick to the plan

Start with a method, either from front to back, or top to bottom. Personally I like to do the hardest jobs first. They're the ones that usually throw up a problem, so get stuck into those, and you have the time to do it properly, plus you know the jobs get easy after then. Arrange your parts ready, including the relevant consumables like seals, as you need them.

5 Hit the workshop

Work through the plan, being nice and methodical. Finish one area and another in turn. A helper is useful, sorting tools and parts, or even doing a parts run if you need something. If on your own, have someone check regularly on you, bringing a welcome cup of tea. All being well you should see your pile of new bits diminish, and a pile of take-off parts growing in the corner. Don't dismiss these, for even standard spares can be turned back into useful cash to offset the transformation. Bear that in mind when stripping parts, cosmetically sound, working parts will return the best money, so don't damage them needlessly.

6 Finished? Not quite

Follow our suggestions, and you should be seeing your dream car materialise through the garage doors. But when finished, don't just roar off down the road in it. Even new cars have a pre-delivery Inspection. Check, so road test attentively. If anything needs specialist adjustment, such as steering, (hopefully you've already factored the task in) attend to that first. Likewise with any error codes thrown up, get them investigated and cleared.



THE PRACTICE

BUT this isn't just theory. LRM wants to show you how, by following our plan, you can do this, too. Step forward our guinea pig: Matt Wall from Staffordshire and his Defender. A 2014 110 Utility Station wagon in XS spec, he's owned it just over a year, on the back of his previous modified 90. After reaching the point where he really wanted the factory air con on the 90, he moved up to this Corris Grey 110. "With my 90, I did a lot of the work myself – it was mainly aesthetics – but it was that thing where you undo a load of bolts, fit something, then, two months later find you're undoing those same bolts to fit something next to the first part," says Matt. "With this, I wanted to do it in one go, so when you drive in one day and it looks standard, then suddenly it turns into something completely different."

In our case, Matt is going for something broadly along the



lines of a Twisted Defender. He's done his homework, spending time at shows, chatting to owners and tuners, seeing what had been fitted to other cars, working out a reasonable balance of aesthetics, performance – and overriding cost.

“Having the luxury of time, some parts have been sourced secondhand, some new, I spent three years in total amassing parts and researching them.” That time helped to get what he needed, but to buy them affordably, too.

This is very much the last step in the build for Matt, who has already done extensive interior work on the car. That work alone took many months, notably stripping the interior to fully soundproof it before fitting his choice of seats, dash and steering wheel. The final exterior work, adding up to about 25 items or so, will take the car from its factory appearance, to looking – and driving – like his dream Defender.

Matt commissioned Ian Baughan of IRB Developments to do the work, allowing LRM in to watch, too. Normally, you

wouldn't be allowed in workshops like this, for warranty and insurance purposes, but Ian has made an exception in this case. Garages wouldn't fit used parts either, instead preferring items they know fit first time, every time, and work as intended. Matt's already been in repeated contact with IRB, and chatted through his intentions, which Ian has added to slightly, as we'll discover. Whilst Ian is on the spanners, Matt's role is that of parts man, particularly as he knows what he has, and what goes where.

Done over a long weekend, the work went broadly to plan. There were a couple of bushes Ian suggested changing over standard, to avoid failures he's seen previously, and the rear half shafts were replaced with one-piece Britpart items. Again, this was to avoid the wear that happens to the factory ones, indeed apparent on Matt's car. This is specialist knowledge and experience at play here. Even the pros come up against problems, but the difference is that for common ones like these, parts are kept in stock. The DIY-er may not, so factor that possibility in.





MATT'S TIMELINE

FRIDAY

10.00 am Ian Baughan starts at the rear, undoing the anti-roll bar bushes and drop joints. A 25 mm Eibach anti-roll bar and Superpro bushes go back on.

Next the rear springs and shocks come off, the axle being supported by a hefty transmission jack. Eibach progressive springs and Bilstein shock absorbers replace the factory originals.

10.45 am Matt starts his first kettle run, with more hot tea throughout the day.

11.30 am The exhaust is next. Typically, the fixings to the centre silencer and back box are corroded solid, thanks to repeated heat cycles from use. Cutting disc to the rescue.

Back section off, and the middle soon follows, allowing the new LRI Solutions stainless pipes to be slid into position.

12.15 pm Round to the front now, Ian begins removing the shock absorbers. There's a cover that needs removing to access the upper fixings under the bonnet. A pipe spanner helps stop the damper rotating as it is undone.

Springs come off next, replaced with more Eibach parts and Bilstein dampers. Ian suggests replacing the standard shock bushes with Superpro parts.

The front anti roll bar stays, but more Superpro bushes replace factory fitted bushes.

1.30 pm Steering bar next, removing the often troublesome drop arm with the correct puller. A Discovery drop arm replaces it, simplifying future balljoint removal. The new HD ball joints are fitted to the Sumobar, roughly adjusted to the length of

the take off part, and fitted. Accurate alignment will be needed later.

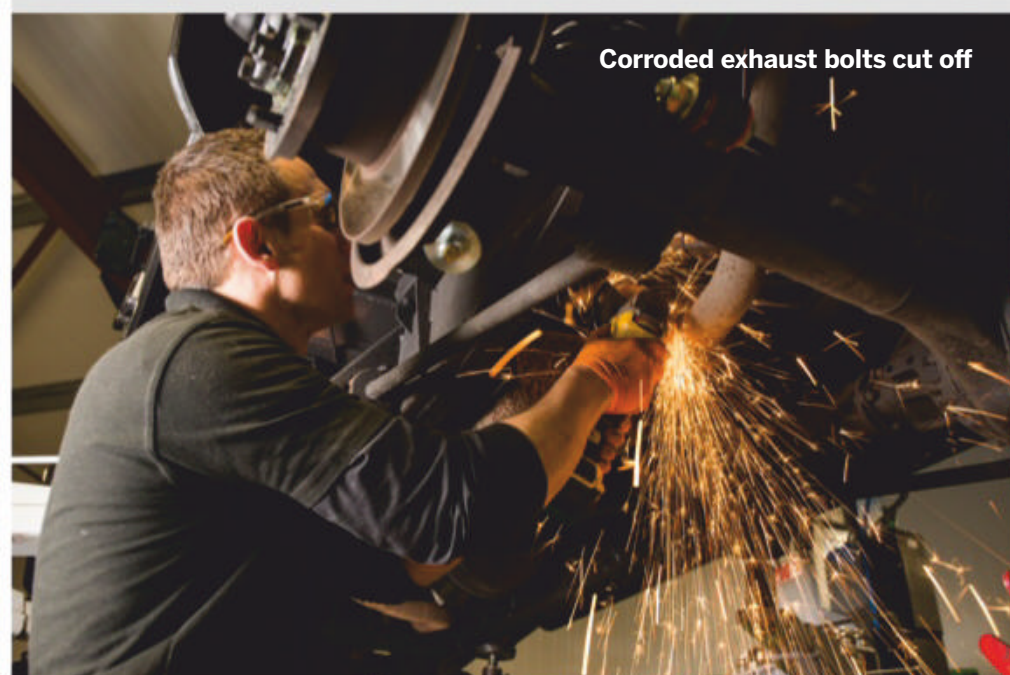
Still at the front, the brakes are next. Half shaft out, hub off, and the discs are split from the hubs. Meaty Alcon units go back on, the bearings are inspected, flushed and repacked with heavy-duty grease and fitted with new seals before the hubs are refitted to the car.

2.15 pm A hasty bite to eat is grabbed, washed down with tea and a few biscuits

2.30 pm Terrafirma pads go in, with new pins in the calipers, and the new wheels are fitted to the car.

3.00 pm On Ian's recommendation the rear half shafts are removed, and replaced with Britpart one-piece shafts, to prevent the wear common to Puma Defenders, and evident in the parts removed from Matt's car.

Rear suspension transformed in just over an hour





Disc split from hub (above) and grease-packed bearings fitted (left)

Ian suggested one-piece rear half shafts when he found wear evident on the factory ones



Methodical parts sorting helps the work go to plan



NAS step goes on. New fixings speed things up



One person strips the old, the other fits the new

SATURDAY

10.00 am The NAS rear step is fitted, remembering the rear crossmember internal brace, and the LED lights go in without trouble.

11.00 am The rear panel is drilled to take the Mantec spare wheel carrier, and the door glass is swapped for IRB privacy tint unit, taking the standard brake light.

12.30 pm At the front, the old headlights come out and new JW Speaker LED units go in, along with body-coloured bezels (like Stage One V8). New radiator grille goes on, with matching

horn grilles, heater vents and a KBX side grille.

The feed for the bumper daylight running lights is wired in, and the new bumper swapped, with new stainless bolts.

1.30 pm The gas bonnet strut is offered up, adjusted and bolted into position.

2.00 pm The side steps go on, with stainless fixings.

3.00 pm Wing grilles and heater grilles go on.

3.45 pm New mirror arms replace the originals, with more stainless fixings on the mounts.



The pile of take-off parts will grow rapidly

MATT'S TIMELINE



SUNDAY

9.00 am Matt takes the car outside, and washes his car, clay bars it and then machine polishes the paintwork whilst the guys are finishing the final elements around him (six hours).

10.00 am New mudflaps and stainless brackets go on, with yet more stainless cap bolts.

11.00 am Using his laptop and special interface and software, Ian tweaks the ECU, uploading one of his remaps – giving 165 bhp and 350 lb-ft of torque from the 2.2.

3.00 pm Matt takes his transformed Defender for a road test.

4.00 pm Matt returns, smiling ear to ear.



Rear end transformed with NAS step and LED lighting

Thanks to

- Ian Baughan at IRB Developments
irbdevelopments.com
- RTA audio rtacaraudio.co.uk
- Buzzweld buzzweld.co.uk
- SNS bodyshop
snsvehiclebodyrepair.co.uk
- Matt Wall
Instagram: @reworxdefender

Parts fitted

- Twisted 18" wheels wrapped in BF Goodridge AT2 tyres
- Twisted front DRL bumper and RING Aurora DRL
- LR bumper ends
- Twisted steering guard
- NAS rear step (towing electrics repositioned into crossmember)
- Mantec spare wheel carrier
- LRI stainless exhaust
- Zunsport stage 1 grille set
- Colour-coded mirrors
- Nakatanenga stainless mudflap kit
- Nakatanenga stainless bolt set
- Optimill billet fuel cap
- S111 Headlight surrounds
- CSI washer jet
- IS 4x4 gas bonnet strut
- IRB475 remap
- Bilstein B6 dampers
- Eibach comfort springs
- Eibach rear anti-roll bar (25 mm)
- Superpro damper and anti-roll bar bushes all round
- Alcon discs
- HEL brake lines
- Terrafirma Ceramic brake pads
- Glyn Lewis stainless Sumobar and HD ends
- Drop arm conversion kit
- Bilstein B6 steering damper
- JW speaker headlights
- Perei NAS LED rear light set
- Britpart one-piece rear half shafts
- IRB rear door tinted glass

A proud owner and his dream Defender





MATT'S TIMELINE

DRIVING out of the workshop again, there's no doubt the car is transformed. But what does Matt think of his dream Defender after taking it out for a test drive? "It is much more responsive," says Matt. "The front end looks super clean, it rides beautifully, sitting about an inch or so lower now. You get a smoother, more compliant ride, more like a car."

Admittedly, he had some minor bodywork undertaken before the transformation, filling in some factory holes normally exposed by the new headlight bezels and grille. TIG welding those in allowed SNS Bodyshop to get the front end paint as good as possible.

Ian adds: "I probably would have

tweaked a few bits – thicker anti-roll bars, and rebushing the whole car, for instance, – but it is down to what the customer wants to achieve." Therein raises the only problem with doing it all in one go. "If there is a negative effect somewhere, it can be hard to trace the problem element," says Ian. Which is why tuners like him like to fit a package they know works in harmony.

It was a concentrated few days or so, helped by being in a proper workshop, with vehicle lift, power tools and specialist knowledge. It does demonstrate though that in a short space of time it is perfectly possible to give your Defender a complete makeover, creating the dream car you've always wanted, just like Matt.

What are you waiting for?

Ian Baughan's Top tips

- 1** Decent penetrating oil, applied for a few weeks beforehand.
- 2** Use the correct puller to remove the steering box drop arm, which can be horrendously tight on the splined steering box thread.
- 3** Be certain you have every single fixing/seal involved. "Matt missed a few, which I fortunately had in stock because I know I'll need them."
- 4** Know the torque figures for each fixing. Using a paint marker after torquing looks neat, and gives a visual guide later.
- 5** Use a decent electric torque gun.



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LIFE WELL LIVED

This 110 inch wheelbase Range Rover by Spencer Abbott has led two different lives: the first as an ambulance, the second as a shooting brake. And that's exactly what the original designers intended. Nick Dimbleby picks up the story

PICTURES: NICK DIMBLEBY





THE average car's lifespan is said to be around ten years, but, as we know, most Land Rovers live longer than that. There are millions of Land Rovers out there with stories to tell, but some vehicles are more special than others: this 1972 Suffix A Range Rover being a case in point. It was destined to lead a life less ordinary the minute it was plucked from the production line and sent to Birmingham

coachbuilders Spencer Abbott a little under 48 years ago.

The story begins in May 1972, when chassis number 355004063A was converted from a regular 100-inch wheelbase two-door Range Rover to an extended 110-inch Range Rover ambulance by conversion specialists Spencer Abbott. Spencer Abbott had obtained official Land Rover approval from the Special Projects Department for their long wheelbase conversion, with their first prototype manufactured in early 1972 using pre-production Range Rover number 25, YVB 168H.

It's worth sidetracking briefly to look at YVB 168H here, as this vehicle was also destined for great things from new. After leaving the despatch department on March 24, 1970, it was requisitioned by the Land Rover Engineering Department, and by early 1971 had already been fitted with a prototype front tow hitch and capstan winch.

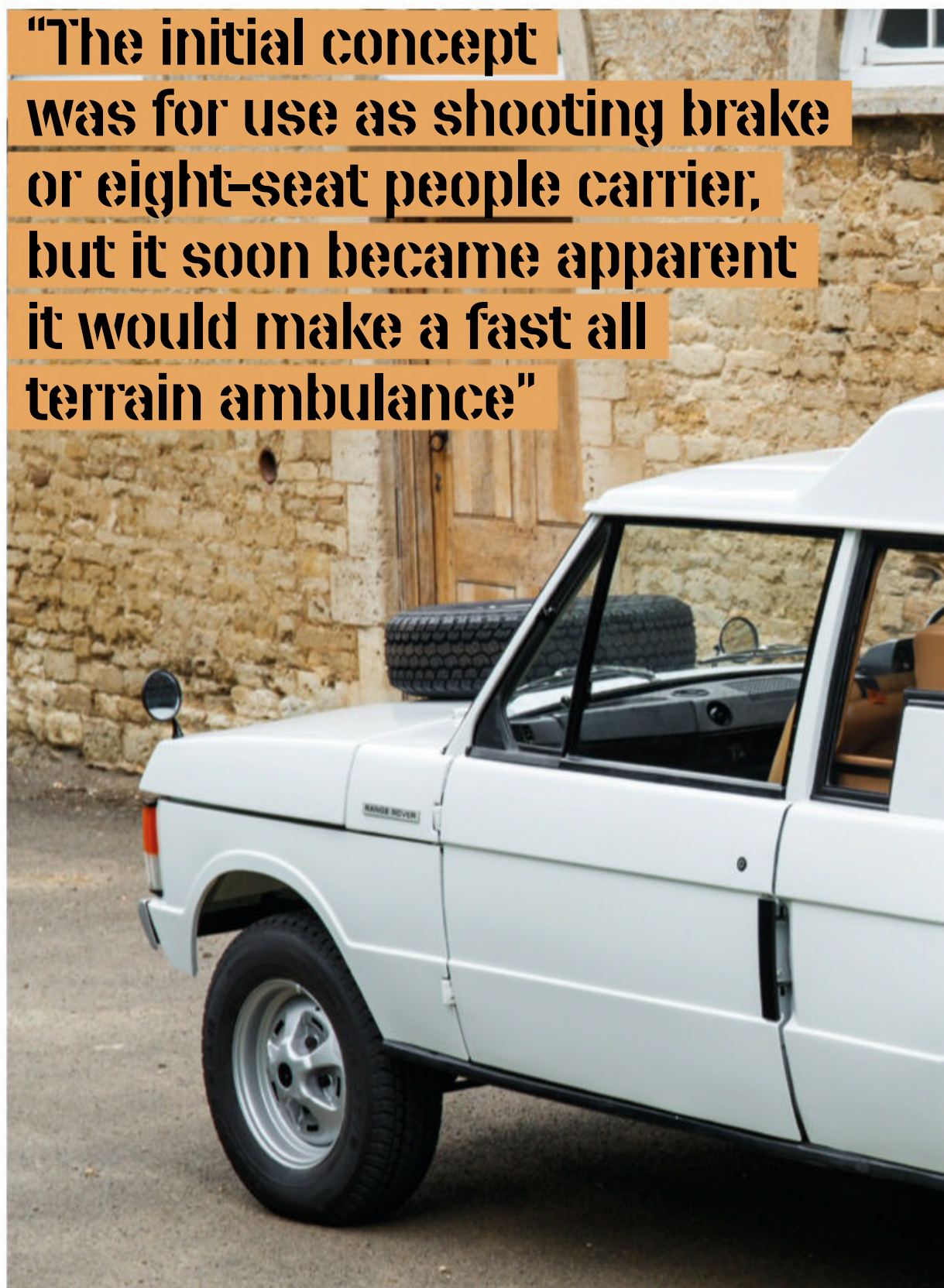
According to Gary Pusey, Geof Miller and Roger Crathorne, writing in *Range Rover: The first Fifty*, by November 1971 the vehicle had become the prototype Range Rover van, after which it was dismantled again, stretched and made into the first Spencer Abbott high-roof Range Rover.

The initial concept for this extended raised-roof vehicle was for use as a shooting brake or eight-seat people carrier, but it soon became apparent that it would also make a fast all-terrain ambulance.

The Land Rover Special Projects Department had already converted a 100-inch Range Rover into an ambulance (registered ELA 830J) but the standard wheelbase and lower roofline proved to be impractically small for useful service. Having shown the vehicle to a number of interested parties, the feedback was: "We like the concept, but we need more space". The Spencer Abbott conversion was the answer.

According to Pusey, Miller and Crathorne, writing again in

"The initial concept was for use as shooting brake or eight-seat people carrier, but it soon became apparent it would make a fast all-terrain ambulance"



The extra ten inches in the wheelbase and the raised roof gives the Spencer Abbott Range Rover an elegantly long appearance





Range Rover: the First Fifty, George Mackie, the head of the Special Projects Department, didn't consider the prototype GRP panels on YVB 168 to be of sufficiently high quality for scrutiny at trade shows and other exhibitions, so two other Range Rover high-roof ambulances were ordered – a left-hand drive (YXC 999K) and a right-hand drive (FXC 831L).

The left-hand drive version was commissioned to drum up interest in the Swiss market, and according to James Taylor, writing in *Range Rover – the First Generation*, the vehicle was exhibited at a trade show in Lausanne, Switzerland, in 1972, but as it failed to obtain any orders, it was returned to the UK, converted to right-hand drive and eventually sold to ITN for use as an outside broadcast camera car. Where it is now is anyone's guess!

As for YVB 168H, that was decommissioned from the Special Projects fleet not long after, and spent the rest of its

Rear tailgate is an engineering wonder, allowing passengers to step into the vehicle easily. Folding seats are based on Land Rover station wagon versions

Land Rover-owned days at the Acocks Green engine plant as an on-site hack. In approximately 1982 it was sold into private ownership after passing through Drifffield Land Rover and, later, the Huddersfield Land Rover Centre. In 2003 it was put back to being a 100-inch standard-bodied Range Rover, with the special panels apparently sold to help keep another Spencer Abbott ambulance on the road (maybe FXC? We just don't know!).

With the Swiss not interested in the Spencer Abbott ambulance, it was left to FXC 831L to do the rounds of trade shows and medical exhibitions, as well as military and emergency service demonstrations in the UK – and much further afield.

Unfortunately though, the Spencer Abbott ambulance still failed to find many buyers, as the concern remained that there wasn't enough space inside. By early 1974 there were





also full height body offerings from ambulance specialists Pilcher Greene, Herbert Lomas and Wadham Stringer that also used the 110 inch wheelbase, and these more practical vehicles were the death knell for the Spencer Abbott ambulance conversion. The company still ended up doing a lot of the wheelbase extensions though (factory-approved converters), so they didn't lose out totally on the programme.

As for FXC 831L, this was retired from Land Rover service late in 1973, after which it ended up in the hands of the medical charity Stratford upon Avon Ambulance Association. This organisation was founded in 1944 before there was a full-time professional ambulance service, and nowadays it consists of volunteers providing effective and appropriate first-aid cover for public events in the Stratford area.

It appears that the vehicle spent another 30-odd years with the SAAA, being well looked after and used sparingly. In 2011 the vehicle benefitted from a general tidy-up and gained a set of snazzy new emergency decals.

However, in 2017, the vehicle was thought to be getting a bit long in the tooth for emergency use (it was 45-years old at this point), so the decision was made by the charity to sell it and buy a high-bodied Land Rover 110 ambulance instead. At this point the vehicle had done an incredibly low 46,000 miles.

The next chapter in the story sees the vehicle on sale at the

Rear seating area was made from scratch by Bishop's Heritage and Nationwide Trim, replacing the original stretcher and side seating combination fitted to the original ambulance

Gloucestershire-based classic car specialist Overbrook. After a few months trying to attract a buyer (a Range Rover ambulance is not perhaps the obvious choice for most classic car buyers), it was purchased by the current owner, who decided that they wanted it converted into a shooting brake. This segues nicely into the second part of the Spencer Abbott 110 Range Rover story, as this was another intended use for the extended wheelbase high-roof Range Rover.

A Spencer Abbott brochure dated August 1974 shows the first shooting brake Range Rover built by Spencer Abbott, this time commissioned by construction mogul Lord McAlpine for use on his Scottish estate.

Clearly Spencer Abbott were hoping for big things for the conversion, but once again, it appears that they struggled to find customers. No one is entirely sure of the final number, but we believe that only six Spencer Abbott high-roof Range Rovers were built (see side panel), making this vehicle a rare beast indeed.

After doing a deal with Overbrook, our customer (who wishes to remain anonymous) sent FXC 831L over to Bishop's Heritage to be converted into shooting brake. He chose Bishop's Heritage largely because owner Chris Bishop is a Range Rover conversions enthusiast and, perhaps more importantly, a man who likes a challenge.

Although all the GRP body panels used for the conversion were present and correct, the unique rear tailgate required quite a bit of engineering work to recommission, and the interior had to be completely made from scratch.

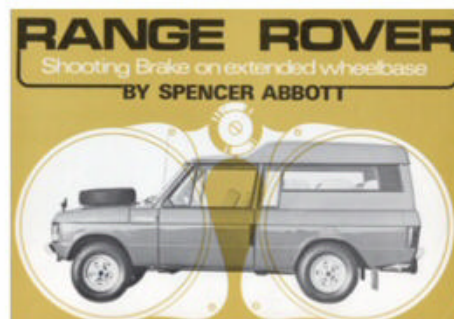
Converting the rear from stretcher carrier to people carrier required quite a bit of thought, and the task was shared with Range Rover specialists Nationwide Trim, who supplied the modern reproduction plastic trim and new rear seats, using Defender station wagon folding seats as a base.

The rear tailgate is an engineering work of art, even though you might argue that it's a little over-complicated for everyday use. First, the GRP upper tailgate lifts up to reveal the rear load bay, with the lower section split



Original photo from the Roger Crathorne collection, showing the recently completed FXL 831L at a trade exhibition in 1973

Cover of the Spencer Abbott Shooting Brake brochure, showing Lord McAlpine's vehicle







Capstan winch and bonnet-mounted spare wheel were options fitted by Spencer Abbott

just above the rear lights. Phase two sees this lower section dropping 90 degrees (as per the standard Range Rover), but the party piece is when the whole lower tailgate section unfolds and drops down to serve as a step. This heavy unit has a spring-loaded helper to make things a little easier, but it's a complicated mechanism that requires looking after. It needed significant refurbishment from Bishop's Heritage to get back to full working order, but for a 48-year-old set of complicated moving parts, that's not too bad.

Two other interesting features on this vehicle are the capstan winch and bonnet-mounted spare wheel. The former is tucked away nicely behind the front grille, and is barely visible apart from the bumper-mounted rope guide.

The spare wheel is a bit more obvious, however, but with the rear loadspace filled up with seats (or a stretcher), the bonnet's the best place for it.

Spencer Abbott engineered the spare wheel mount to last, with a circular reinforced cross beam sitting along the inside of the bonnet to support the heavy wheel, which, when shut, nestles into two circular cups situated above the left and right suspension turrets.

It's a simple system that works well, although – as you might expect – the bonnet is quite heavy to lift! Appropriately enough the bonnet stay has been relocated from the top to the middle of the bonnet to ensure that the maximum support is offered.



Detail of the bonnet spare wheel mount, showing the circular strengthening panel that sits in the cups fitted to the top of the suspension turrets



Looking at the overall proportions of the finished vehicle, the Spencer Abbott high roof Range Rover is an elegant looking thing.

Stripped of its somewhat distracting emergency decals, roof mounted Ambulance sign and blue light, the extra ten inches in the wheelbase helps to keep the overall proportions well balanced.

It is said that Land Rover stylist Tony Poole had a hand in the early design work of the vehicle, and it's clear that this isn't just a hastily thrown together conversion.

Inside, the cabin looks sparsely comfortable, as was the norm for Range Rovers of this era. Compare it with a Series III from the same period though, and it's certainly a lot more luxurious.

The off-road ride, too, would have been much smoother on the grouse moor, although there's not a massive amount of space in the back. If there were six big people wearing large coats, it would certainly be snug...

All in all, FXC 831L is an unusual and rare vehicle that has benefitted from a new lease of life. It is probably one of only three still in existence, and is certainly the only one in full working order.

It's good that it has retained the original raised-roof body as part of the refurbishment, and by converting it from ambulance to people carrier, the Range Rover becomes a useful vehicle for anyone needing to carry eight people around off-road. Although it might be a bit more cramped, it certainly makes a head-turning alternative to a Defender 110.



Spencer Abbott raised roof conversions

- YVB 168H. First prototype. Converted back to 100 inch standard body in 2003. Currently SORN.
- YVB 999K. Left-hand drive demonstrator. Converted to right-hand drive and saw service as a ITN Camera Car. Current location unknown. Untaxed since 1999.
- FXC 831L. Right-hand drive demonstrator. Now rebuilt as a shooting brake.
- MCA 724 First Spencer Abbott shooting brake. Commissioned by Sir Alfred McAlpine, location unknown.
- HF 923. Ordered by the Belgian Gendarmerie as a communications vehicle for its 'Special Intervention Squadron' in the mid-1970s. Location unknown.
- UDU 924R. Used as a mobile engineering and test workshop by British Leyland engineering. Converted into a fast response ambulance in the late 1980s and used for rally recovery. Location unknown. Untaxed since 2003.

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BAHAMA

MAKEOVER

When Joanna Bland found that her brother James was selling his powered-up 1999 Discovery 2, she decided to buy it and rebuild it completely herself. With a little advice from her Landy-mad family of course...

I first met the Bland family at the Driffeld Land Rover Show of 2019. Dad Richard proudly strolled over to the LRM stand to show me some pictures of a 1999 Discovery 2 that his daughter Joanna was busy restoring. Dad lovingly praised her efforts despite the fact that the project was not quite finished yet. I liked what I saw and told Richard to let me know when I could see and photograph the finished project.

The same scenario repeated itself a few months later at a wet Kelmarsh Land Rover Show. Joanna barely said a word, she was like one of those kids who wanted their parents to

stop talking about them. I could see from her hands that she was not afraid of hard work. The updated pictures that her Dad showed me once again confirmed that she was doing a more than fantastic job.

I quickly realised that the quality of the work and the unusual Bahama Gold colour of her D2 made it the perfect vehicle to be featured in LRM.

Then, just before Christmas, an email from Richard popped into my inbox. It contained 'before' photos, more photos taken during the build and, finally, the finished project. I was impressed and knew it was time to head to County Durham.



STORY AND PICTURES: PATRICK CRUYWAGEN





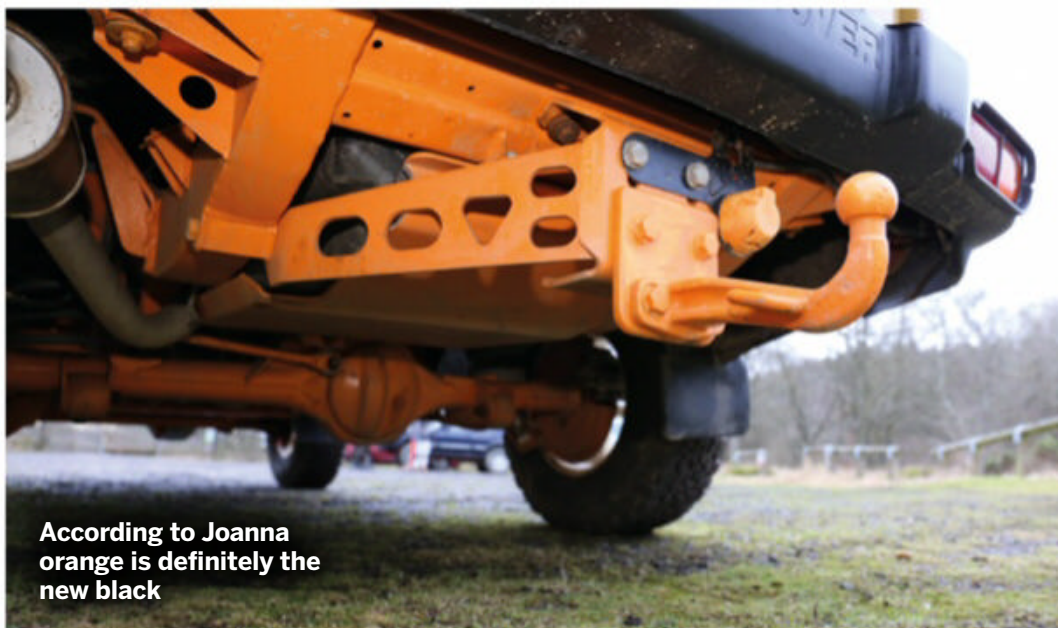
A paint job that looks like it has been done by a pro outfit



Note the incredible attention to detail



Big tyres equals wider arches



According to Joanna orange is definitely the new black



Everyone needs a bit of protection when bouncing over the rocks



A few hours later, as I pull into the Bland family driveway, I could be forgiven for thinking I'd made a wrong turn and ended up in a Land Rover service centre. Mum Lynn's Freelander 2 and Dad's Discovery 2 occupy the massive double garage which also acts as the workshop and paint booth. Meanwhile, Joanna and her brother James are frantically trying to get all the mud off her D2 wheels, as they had done a spot of green laning the day before my visit.

The Bland's live just south of the Scottish border; it's a wild paradise, especially if you are also into mountain biking as Joanna and her brother James are. I'm ushered into the house and given a northern welcome — a cup of coffee and a biscuit. I notice a few copies of Land Rover mags that the Bland family have already appeared in.

While taking a sip of my hot coffee I ask about the history of the Discovery 2. Its previous owners used it as a shoot vehicle and it had dogs in and out the back all the time. Most importantly it was well maintained. Now it has been in the Bland family for almost a decade. We are getting ahead of ourselves here and so I ask James to fill in the gaps...

"I bought it to flip it but once we sorted a few niggles I really liked it so I instead sold my BMW 5 Series that I had at the time. The D2 would now be the tow car for my challenge truck because I think Dad was getting tired of me using his D3."

At the time it was a manual but James' wife only had an



auto licence and so he installed a D2 auto gearbox. He was not done however, now deciding to build a new challenge truck. First off, he purchased a galvanised chassis, found a Td5 engine and did a full rebuild on it with a hybrid turbo. It was then mated to a HP24 gearbox out of a 4.6 Range Rover so it had bigger clutches and packs. A Td5 bellhousing, Ashcroft heavy-duty torque converter and heavy-duty flex plate were next on the list of additions. ‘

‘I had spent so much time and money building it all, and then six months later the Discovery 2 started to develop a head issue and I decided to put the Td5 engine from my former challenge truck into it. Obviously, it needed a high-performance intercooler, so I fitted one of those and then I mapped it to push out 180 bhp. Not your average D2.’

James then drove it for a few years but once his wife Teresa fell pregnant, they decided it was not the most practical car for her to get in and out of. It was then that Joanna decided to join the Landy Clan of the North. At the time she was driving what she calls a very sad Renault Kangoo 4x4. ‘

‘I was watching James weld a dead Land Rover in the garage and decided that I wanted to have a go at that. I was sure that his D2 also needed welding so I decided to buy it. I gave him £1600 for it. Not bad considering it had a front ARB locker, installed centre diff, rear limited slip diff, winch

The Bland family live only a few minutes away from some stunning greenlanes

bumper, snorkel and that engine. Even though the 265/75/16 BF Goodrich All Terrains were bought later by Joanna, it was still a lot of Landy for the price.

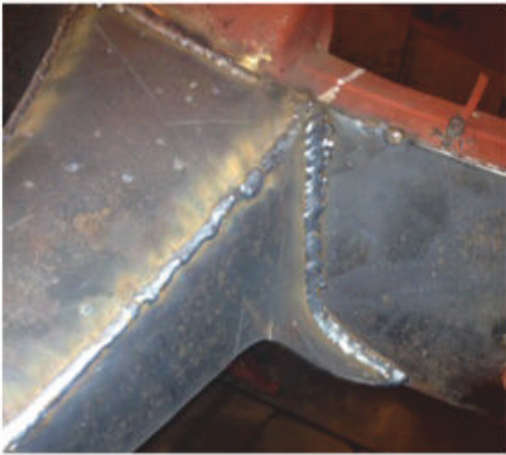
‘As with most D2s it had chassis issues,’ confesses Joanna. After driving it for about a year, she decided that it needed some TLC. ‘I was poking about the engine bay and hit something and bits fell off. So, while it looked okay it was not okay. There was hardly anything left of the front inner wings. The more you went into it the more it kind of dissolved. Dad wisely said to me ‘focus on the bit you are fixing and not the problems that lie ahead’. Anybody else might have scrapped it but I wanted to save it,’ admits Joanna.

James and Richard have welded many a Land Rover and so they showed Joanna how to weld and off she went — no courses, no books. The only shame is that she did not get a qualification at the end of it because she has done a mighty fine job.

Richard used to be an open cast mine plant manager and his retirement coincided with a double hip replacement. It was around the same time that Joanna decided to rebuild the Discovery. Hobbling the ten or 15 steps from the kitchen to the garage was an important part of his rehabilitation. There he would sit on his stool and offer Joanna advice.

I ask Joanna why did she not just buy a new chassis? ‘We looked at the price of a new chassis and decided to repair it





By the end she could weld like a pro



Getting there with the chassis



After seeing James weld, Joanna decided to buy a D2 and give it a go



Many hours to get the chassis looking like this



Time to get the body back on



Richard Bland is one proud dad



The Bland family have their own paint booth in the garage

instead,” she says. “Besides the family has experience in chassis rebuilds — we did Uncle John’s Range Rover Classic when you couldn’t get replacements for them.”

Richard explains the process with the chassis repairs. “It took Joanna nearly a year to do the chassis. We used two sheets of eight by four 3 mm steel which is much stronger than what they use on a

standard chassis. The flats for the tops and bottoms of the chassis were guillotined so that they would be true to the form of the chassis.

First, we shot blasted it then we primed it and put it on builder’s trestles. Next we got rid of the rot: the parts of the sidewalls that were too thin were cut away in sections and we put 1.6 mm plates in their place. Then we put the 3 mm plate on top of everything. So, it’s a double-skinned chassis really.”

James, an industrial machine designer, would pop in when he had time, to give advice and encouragement to Joanna. Once she got the chassis back to better than new she realised that it would be a shame to put the horrible old body back onto it with the rusty patches across the roof.

She also needed new rear quarter panels and two new front doors. They were all different colours to the original red and she also realised that she would have to paint it all once she’d finished working on body shell.

Joanna explains her predicament: “The windscreen was hanging off and leaking. We found holes in places you would



Joanna uses her D2 to get to work and for greenlaning



Even the engine had to be taken apart

not expect to find any, behind panels and covers. So, we had to address the weak areas, stabilise them and put them right. If you look down the bottom behind the inner wings, it's like a sponge and sucks all the water in. You really want to cut three inches away right the way around, so that the water can naturally drain."

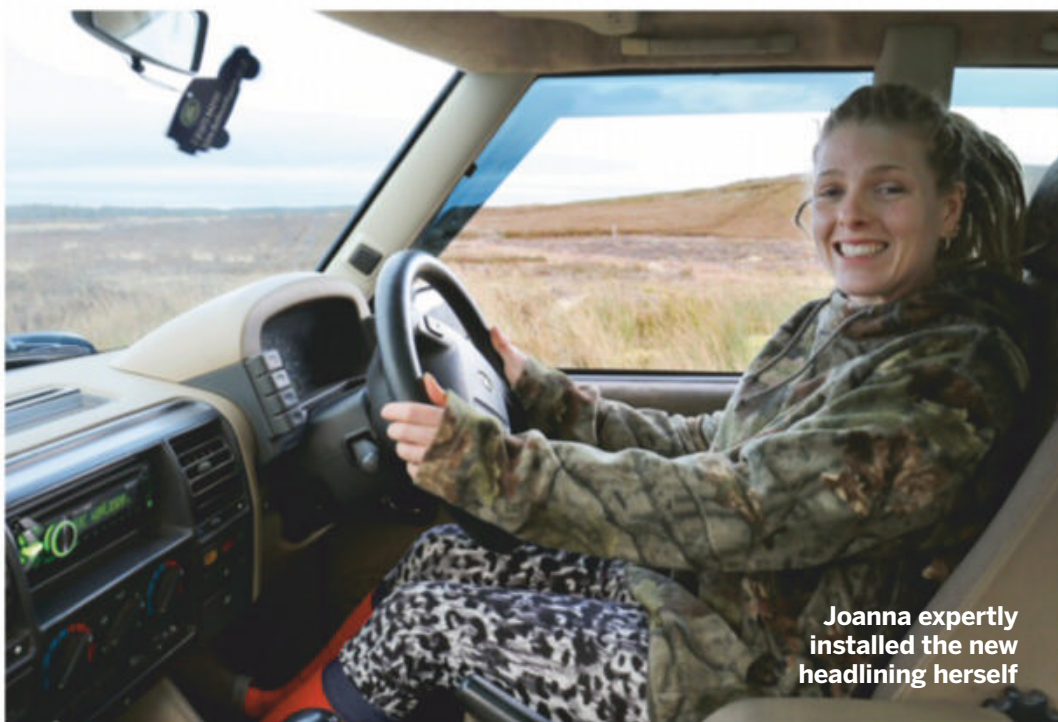
Joanna explains what happened next with a smile. "The sanding down took a long time. I probably took a bit more off than I should have. My brother teases me that I wanted to start from the metal."

All the bits such as the two front doors and replacement panels were from other Discoverys that were broken up for spares. So, while these vehicles do have rot issues, once you get rid of the bad stuff, you can build yourself a very tidy Discovery 2 using bits from those that have been written-off. Basically, you are recycling Land Rovers. Is that not better for the planet than an electric or entirely new vehicle?

With the chassis, engine and body sorted it was time to decide if she wanted to paint it. Initially she wanted to paint it in Masai Red like her Uncle John's aforementioned Suffix A Range Rover but she instead opted for a Bahama Gold body and Limestone White Roof.

She was in good hands, as Richard is the most experienced painter in the family. "I've been painting since I was 16 years old when I used to go and help the painter at the Caterpillar plant hire," he explains. "Some of their customers would want different colours to the traditional Caterpillar yellow. I then showed James how to paint and he in turn then showed





Definitely more capable than a standard D2

Joanna. If you show Joanna something then she soon wants to do it herself!

As I walk around the D2 I cannot believe what a great job she has done. In fact, I have seen worse efforts by pro painters with very expensive paint booths. This was done in their garage in a homemade booth.

I ask Joanna what makes a successful paint job? "The mixture and temperature have to be just right. It was cool when I did the first coat and so I got a few runs. It was not as smooth as I would've liked, but it buffed out okay." When doing the rest, she used more thinners and was extremely happy with the result. For her it was a massive learning experience. "Getting the mix right and then duplicating it was a challenge. I think painting is easier when you have a constant temperature of around 17 degrees Celsius."

I take a peak in the cabin. The interior is pretty much standard, though over the years the Blands have replaced worn cushions. I notice that the headlining is all new; her mum is quick to point out that Joanna installed that too.

I ask Joanna if she is happy that her brother did the auto conversion when he owned the D2. "It's my daily driver and I use it to go greenlaning, too. I love the auto box, it's much better for off-roading: no slipping clutches and more forgiving on the drivetrain. I can't see myself driving a manual Land Rover after this."

While there will always be banter between siblings I can see that James is extremely proud of his sister. "It's amazing what she has done," he says.

"You don't hear about young women rebuilding Land Rovers themselves. It should not be like that. Her attention to detail is probably better than mine. (Ed: That was not off the record) This was entirely her work with some advice and tips from us. I am so proud of how it has come out."

The normally quiet Joanna puts it all into perspective: "We have put so much money and love into it. I am glad that it has stayed in the family. What you see here definitely does not resemble what my brother once had."

She is too humble. As I head south back towards Bedford I have a big smile on my face. I love stories like this. Salt of the earth people and real enthusiasts. Not a bunch of pavement-hopping bolt-on-Billies. I've made a date with the Bland family to go greenlaning in Northumberland with them and I intend to keep it. Well done Joanna.



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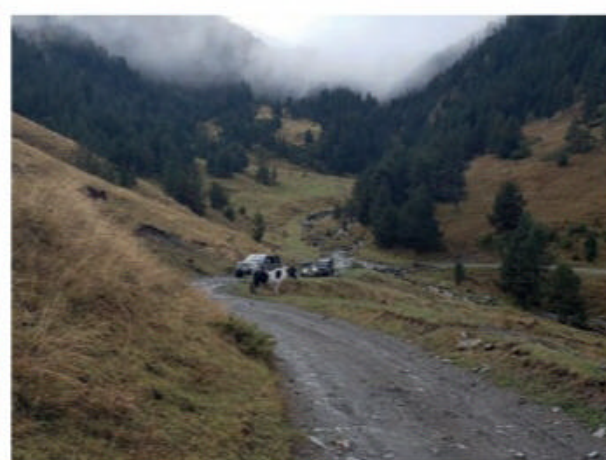
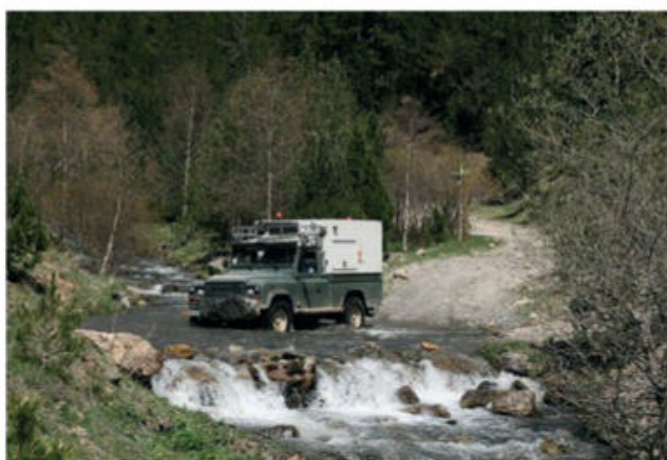
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This month we wanted to share with you everything you need to know about joining us on our Pyrenees trip! This two week ultimate adventure takes the rough with the smooth and the highs with the lows, week one of the trip starts in the forest continuing through the desert arriving to a landscape littered with ancient castles, tracks and bridges finishing in Anisa. Week two starts in Les taking you higher into the mountain, tracking the ski resort piste runs.

What makes this trip one of our most popular trips is the flexibility to join us for the Ultimate two week adventure or just one of the weeks (First week Foothills, second week Altitude). This is a hotels based trip so no camping equipment required, so it's just you and your vehicle. Ardent Off Road carries all the recovery equipment so you don't have to! There's no hidden costs either, ferry bookings are included in the advertised price.



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ARDENT TEAM MEMBER

Andrew grew up in a farming family and was taught to drive a Land Rover at the age of eight by his grandfather, and has loved off roading ever since. Andrew says he has owned too many 4x4 vehicles to count and certainly too many to admit to! Having owned a wide range of vehicle makes, and experienced the best and worst of them, Andrew really knows what is required to make a vehicle perform to his exacting standards. "Do it right and do it once" is his ethos when it comes to vehicle builds. Andrew's favourite destination is Galicia as it's always a challenge

WHAT'S ON AT ARDENT OFF ROAD

As we head into February the Ardent Off Road team are busy preparing for our first trip of the year our only UK trip the Coast to Coast. This is a favorite with new and returning customers and of course the Ardent Off Road team. Then it's straight into preparation for Morocco in April.

//////////////////// *Get in touch with the Ardent Off Road team* //////////////////////

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TMD take a low-mileage late Defender and make it
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CERTAIN cars just look right in very specific colours. A Rosso Corsa Ferrari. A Bahama Gold two-door Classic Range Rover. A Norfolk Mustard Lotus. A Silver Birch Aston Martin DB5. A Sonoma Green Defender 90. Now wait a minute. Sonoma Green? Is that not the colour of choice for an Audi RS6? Aren't Defenders normally white if being used by neutral aid organisations or else some sort of traditional green for the rest of us?

I've just been picked up from Brighton train station on the south coast of England by Loui Evans in yes, you've guessed it, a Sonoma Green 2011 Defender 90. For the past 25 years Loui has faithfully been working for The Thatched Garage, a company who have built up a strong reputation for selling quality second hand Land Rovers. Loui is a Landy man through and through and when not tinkering on clients Land Rovers he likes to build and trial his own Land Rover. Then when he wants to get away from anything Land Rover related it normally involves a drone, monkey bike or a quiet pint at his local on a Friday evening.

As Loui hastily stops the 90 outside their East Sussex country garage, I'm met by the dealer principal Ben Digby

STORY AND PICTURES: PATRICK CRUYWAGEN





Wing mirrors
made from
billet
aluminium



KBX wing
top vents



KBX side vent; wing protectors in black chequer plate



Headlights
from JW
Speakers

Clarke. Loui is quick to whisper in my ear that Ben was still in school when he started working here for his dad Neil. Ben is the driving force behind tmdtuning.com, the one stop online shop for Defender upgrades and enhancements. It's where people from around the world (and the UK) can order just about anything for their Defenders. The Sanoma Green Defender 90 that I will be photographing and experiencing today has been given the tmdtuning.com treatment. It's a way for Ben to show potential customers what their Defenders can look like and if they don't have one, then they can just buy this one! See page 76.

"Fish and chips or a pie?" asks Ben. Is that a south coast way of greeting? I'm confused. Loui explains. "Every Friday Ben treats the staff to lunch and luckily for you, I am about to order." We're not too far from the sea and so I go with the fish and chips. I then ask Ben for his thoughts on the current state of the old Defender market now that some people have started to order new ones. "Prices have peaked for the top of the range old Defenders. At some stage the market will be flooded and then we will see a drop in prices. That said Td5 Defenders are holding their values very well in the UK. While we still see ourselves as Defender specialists, we have sold quite a few L322 Range Rovers of late. You can get a lot of car for a lot less cash than you would splashing out for a very average Defender."

As we wait for our takeaway to arrive our attention turns to the Sonoma Green 90. This was one of the last Puma 2.4s ever made and it has only done 40,000 miles. I ask Ben about the choice of colour? "

"White is not that popular any more when it comes to Defenders. While SVR blue does look good we decided to go with Audi RS6 green instead. It gives off a slight yellow glint in the sun." Today is a grey day and so I will never know.

Ben is undoubtedly proud of the finished article and as a fan of Springbok rugby, I too fall in love with the colour. "This vehicle demonstrates what we at TMD can do for your readers or Defender owners. Subtle, quality upgrades that transform the vehicle. A fresh, modern look for an iconic classic."

My fish and chips arrive and they go down faster than a homesick mole. After washing my greasy hands Loui and I head out in the 90 for a photoshoot. My own 22-year-old Defender recently had an interior makeover courtesy of

TMD add-ons

- Sonoma Green paint job
- Santorini Black roof
- TMD Classic light surrounds in Santorini Black
- Zunsport grille
- Black Defender decals
- KBX Santorini Black wing top vents and side vents
- TMD security front door hinges
- TMD billet mirror arms
- TMD billet mirror heads
- TMD billet fuel cap
- JW Speaker black headlights with DRL
- Wipac smoked light kit
- Black Dynamic side repeaters
- Black side runners
- Black chequer plate sills
- Black chequer plate rear corners
- Hawke Wildtrack clack 18" wheels
- BF Goodrich All Terrain tyres
- NAS rear step
- TMD Shift-R short shift
- Rigid Scene light
- Alpine Car Play Double Din Stereo
- Gloss black fascia
- XS dash trims
- XS raised cubby box
- TMD black billet steering wheel
- Heated front seats
- ABS
- TC
- Air conditioning
- Half leather seats



Exmoor Trim and that is the beauty of old Defenders. Yes, it might still have an old-style dash but when it comes to seats, carpet and steering wheel it is definitely better looking than the last of the old Defenders that rolled off the production line at Solihull on that dark and depressing day of January 29, 2016. Yet even though you can modernise and enhance them they still remain simple, old Defenders. That ladies and gentleman is what Ben and his team at tmdtuning have done with this nearly 10-year-old Defender.

The name says it all... sort of. TMD tuning have not tuned the vehicle but they have vastly improved it, thereby upping its value and appeal. It's obviously not aimed at the type of owner who goes greenlaning. This one is all about strutting its stuff on the Tarmac. I'm sure that Ben will agree with me.

So where do we start then? I think enough has been said about the paint job, but it does contrast superbly with all the black additions, including the old-school Zunsport grille, TMD Classic light surrounds and KBX wing top and side vents. TMD have manufactured the mirrors and fuel cap from billet aluminium on a 4-axis machine, and again with a black gloss finish they look and feel like quality products. TMD also replaced the door hinges with more robust and secure ones, good luck with getting those off!

Black side runners and chequer plate covers for the sills is in keeping with the two-tone colour scheme but also ensure that rocks won't damage the body if jumping onto an extreme pavement. Remember this sits two inches lower than a standard Defender thanks to the progressive lowering springs, and you certainly feel the advantages when cornering at speed. Set up for the road rather than the mud, it's definitely less bouncy than mine.

Headlights too have been upgraded with a pair of JW Speakers, it doesn't even have to be dark for you to see how much whiter and brighter they are. Other lighting enhancements include the Wipac smoked lamp kit and the dynamic side repeaters. Would love to see how the lighting set-up performs down a dark lane on a stormy night.

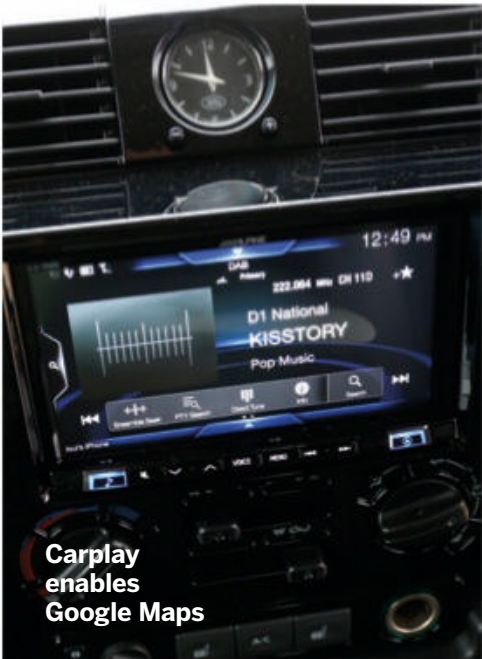
I think that the suspension changes that Ben has made have done more than enough to enhance the on-road handling. Then if it has to go off-road it will still be highly capable we're sure, further helped by the BF Goodrich All Terrain Tyres on 18" Wildtrack wheels. Another thing that



Wipac
smoked
lamps



Steering wheel is TMD's own black billet model



Carplay enables Google Maps



XS dash trims match the originals

improves the driveability is the shift-R short shift kit which makes for a shorter, faster throw.

The interior has not received as much attention and expenditure as the exterior but Ben and his team have done enough for me to feel and notice the difference. It's not too flash and it's functional which ticks my boxes. Interior artists Ruskin supplied the XS dash trims to match the originals. I like the XS raised cubby box because when driving it my left elbow no longer floats around. The not-so-good standard radio has been replaced with an Alpine double din stereo which has Carplay so you can use Google maps, which is a plus. The front half leather seats are heated, great for a cold day like today, while the old large steering wheel has been replaced with a TMD black billet version.

While Ben and TMD invested labour to build this Green Machine, one could just as easily order the parts from TMD Tuning and do it all on your driveway. Good luck with getting the paint job as good as they did though. As we move into the new Defender era, I'm sure Ben and his team will be creating more of these types of Defenders. So too will our readers. While old Defenders might get old it does not take much to enhance, improve, refresh or make them 'greener'.

Thanks to Ben Digby-Clarke and the TMD team for hosting LRM for the day. If you're looking to buy a Defender and want someone to transform your current Defender then you won't go wrong with TMD. These guys have sold, rebuild and transformed more Defenders than most. For more details see tmdtuning.com or call 01825 841148. The 2011 Defender featured here is currently for sale at £35,950.



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Classic no. 9

PICTURES BY BOB WEIR

Jaguar Land Rover's Classic division restores old Series Is to their original specification. Iain Thomson from East Lothian has bought car number 9. Bob Weir investigates

THE decision to renovate the original batch of 25 Series Is caused great excitement in the Land Rover world, and with good reason. The plan was to restore the vehicles to their original specification, as part of JLR's Reborn program. Customers were offered the choice of materials, two wheel bases and five period colours, but there were no concessions to either safety technology or emissions. The result was a true thoroughbred of the post-war era, albeit at a price.

The project was kicked off in 2016 at the Techno Classica Essen, in Germany, the largest classic car show in the world. The Classic division had already found a buyer for the unrestored Series I on its stand, which was also due for refurbishment under the new scheme. Land Rover cast their net far and wide, and donor vehicles were sourced from places as far away as Australia. The 4x4s were also not restricted to right-hand drive, as foreign buyers were expected to show a great deal of interest. The cars were then all brought home to the UK, where they were restored at JLR's new Classic workshop.

The first batch of 25 Series Is were cherry-picked from amongst suitable restoration candidates to ensure they were as authentic as possible. Nothing was left to chance, and the work was entrusted to a hand-picked team of mechanics with more than 200 years of Land Rover experience under their belt. Each vehicle soaked up hundreds of man-hours, as they were stripped down to the bare metal for a full nut and bolt rebuild. The lucky customers were allowed to view the work in progress, which was expected to take over a year. The choice of five period finishes included Light Green,



Reborn UXS 789 is a vehicle
to rival any Land Rover
Classic, but at a price



Donor vehicles for the programme were sourced from all round the world. UXS 789 spent its early years in Australia



Attention to detail: items like the bonnet catches are all based on the originals



Bronze Green, RAF Blue, Dove Grey and Poppy Red. Each Series I was given a one-year warranty, and the scheme was so successful it has now been extended.

Allow me to introduce you to Iain Thomson. He manages an arable farm in East Lothian, which has been in the family for four generations, and has been a big fan of Land Rover since he was a teenager. He takes up the story: "My father owned a Series I when they were new in the 1950s and by this stage I was old enough to drive. Growing up I had also learned some mechanical skills, and was always tinkering around with old cars regardless of whether they had a green oval badge on them or not."

Iain's first Land Rover was an 86in Series I, which he acquired in the late 1990s. "It was a 1956 model, which I picked up for £500," he recalls. "Series Is weren't so highly sought after back in those days, and you could acquire them for very little money. The Land Rover wasn't in great condition, and needed a fair bit of work to lick it back into shape. The end result wasn't perfect by any means, but at



least the vehicle was roadworthy and I used it as a runabout for several years.”

Iain then went through several other Land Rovers, but never forgot his Series I. “I always promised myself that at some point I would acquire another one in really good shape. Alternately, I would restore another vehicle to factory-fresh condition. Unfortunately my responsibilities and workload on the farm steadily increased as I got older, and the second option wasn’t really viable. We run several old Defenders on the farm, and just keeping them roadworthy took up a lot of my spare time. When Jaguar Land Rover’s new project came along, I could not resist the temptation.”

Fortunately for Iain he became aware of Land Rover’s latest initiative, as soon as it was announced in spring 2016.

“Pictures from the Essen Show popped up out of the blue on my Facebook news feed so I was very lucky,” he explains. “It was fairly obvious from the start that there was likely to be a lengthy queue of potential buyers. I got straight on the phone, and was put through to the Classic Sales manager

Old but new: the cab and rear area is exactly how it should be. The only ‘extra’ is leather upholstery

Stuart Kilvington. As I recall, Stuart had been on the stand in Germany, and he gave me an update on the situation. If I was interested in buying one of the vehicles I would have to be quick, as there was a lot of interest. I was back on the phone the following morning, putting down a deposit.”

The cost of acquiring a Reborn Series I has been well publicised, and Iain admits it was not an easy call. “Although the vehicle was very desirable, it was quite expensive,” he says. “Fortunately, I decided to back my judgement and came to the right decision.”

When Iain put his deposit down no particular vehicle was actually allocated, but this was soon resolved. “I told Stuart I wanted a vehicle similar to my father’s, an 80 inch chassis equipped with the 1.6-litre engine,” he recalls. “I was fortunate to get my wish as demand was so high, that everybody was being asked to accept the model they were offered. When I put in my order there were only two 1948 vehicles available for the Reborn programme, a left-hand drive and a right-hand drive.”

Iain’s 80in (chassis no: 862731) is one of the 3000 Land Rover’s that were built in 1948. The vehicle was shipped on February 23, 1949, to Grenville Motors in Sydney, and was initially used by the Department of Water Conservation and Irrigation in New South Wales. The vehicle was then sold to a cattle farmer S Kidman & Co based at the Maureen Joy Station, near Bourke, in the outback. Once the Land Rover finished its working life, it was parked up until it was rescued by JLR Classic.

“As far as I’m aware UXS 789 is the only 1948 Series I from the Reborn program currently in the UK,” Iain explains. “Luckily I was allocated the RHD model. I then went down to Ryton-on-Dunsmore to have a look at the vehicle, before the work went ahead.”

This was the first of several trips that Iain made to Warwickshire, to check on the Land Rover’s progress.

“I went down to England to look at the bare chassis, and again when they fitted the engine and bulkhead,” he explains. “The car has retained its original rust-free chassis and bulkhead, along with the running gear. The only exception to the original specification is the engine, which was changed some time during its working life in Australia. I was also



According to Iain, UXS 789 can also cope perfectly well in today's hectic traffic



Iain Thomson has been a big fan of Land Rover for many years



The engine is not the original, but was also fitted Down Under

lucky enough to be invited to the open day at the factory when they held the official press launch. I have to say I was pretty excited, but there were a few anxious moments as I worked out how I was going to pay for the vehicle!"

The rest of 2016 and most of 2017 crawled by as Iain tried to forget about the Series I, and concentrate on the day job. Then the moment finally arrived when he was invited down for a test drive.

"I finally got the summons last autumn, and went back down to Ryton," says Iain, who is a member of the Series I Owner's Club. "They wanted me to test drive the vehicle to make sure it met with my approval, so I went for a quick spin around Coventry. I found the gearbox surprisingly straightforward to use. The only extra I had specified was leather for the upholstery. Having given the vehicle the thumbs up, I took delivery in December."

Once both owner and Land Rover were back in Scotland, Iain admits to being a bit nervous when he first got behind the wheel.

"I'd already decided that I was going to use the vehicle, and not just keep it for show," he says. "After a couple of local jaunts I drove it to the May bank holiday weekend Land Rover rally at Ingliston, which involved driving around Edinburgh's notorious city bypass. Fortunately the journey went without incident, and the other motorists were very polite. The 1.6-litre engine is surprisingly flexible, and copes with the traffic quite well."

According to Iain, UXS 789 has also become a bit of a celebrity. "During the summer before I took delivery, Land Rover asked me whether they could put the Land Rover on the concours stand at Hampton Court Palace," he explains. "The vehicle also went to the Goodwood Revival and, slightly closer to home, it was shown at his local Haddington Show and the Borders Vintage Automobile Club Show at Thirlestane Castle near Lauder, which was celebrating 70 years of Land Rover. UXS 789 won best Land Rover in show."

As I was about to leave Iain and his stunning restoration, I asked about his future plans. "I certainly intend keeping hold of the Series I, at least for the foreseeable future," he answers. "The Land Rover is fun to drive, and I like having it around. I'm hoping to attend a few more rallies this summer, work permitting so maybe I'll see you there."



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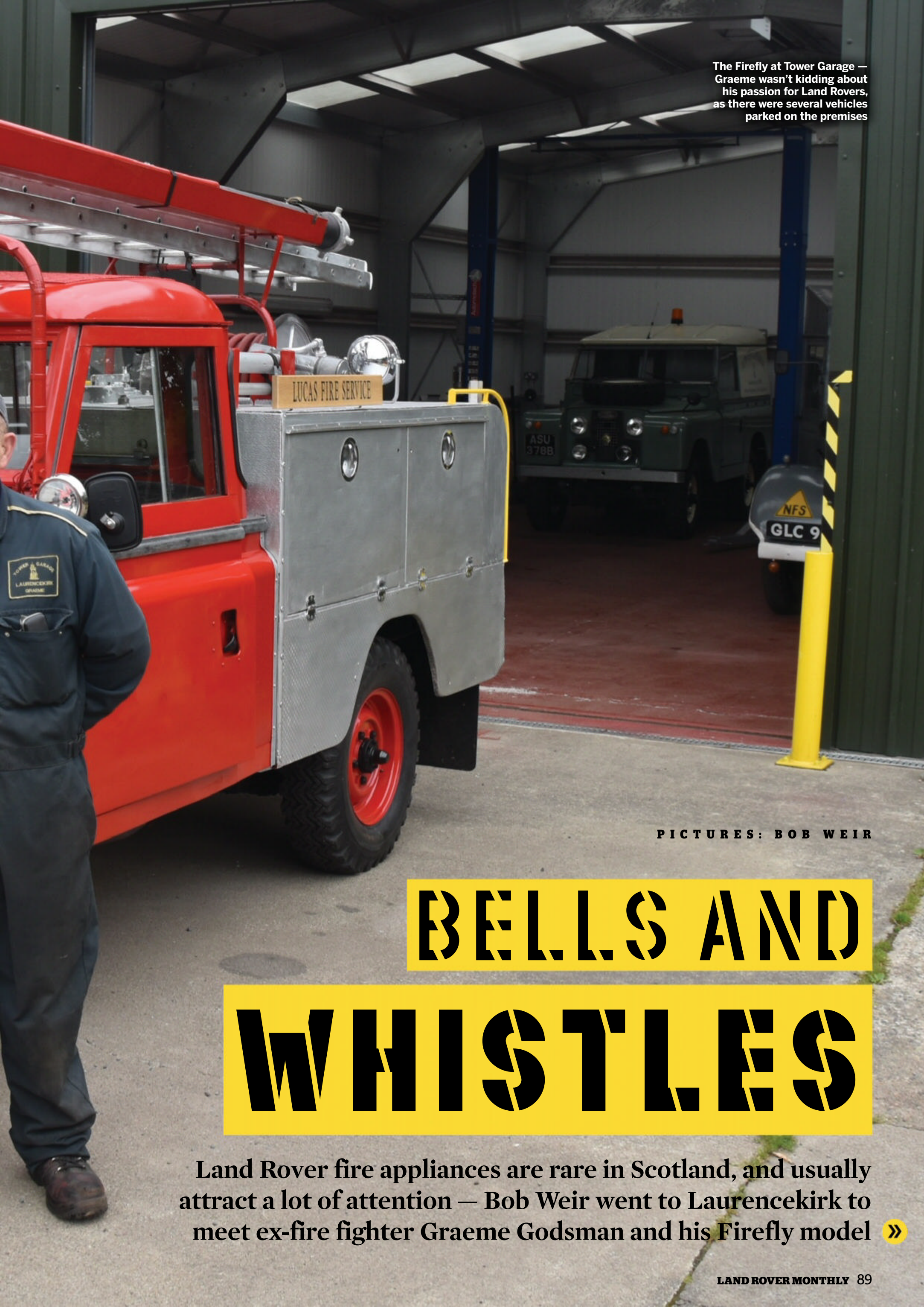
American Land Rover fans were given the opportunity to drive the new Defender (on a fairly tame course) at the recent Land Rover 4XFAR on January in Palm Springs, California. With great music, plus lots of old and new Land Rovers, it was a show with a difference.

Picture: Stefanie Keenan/
Getty Images for Land Rover





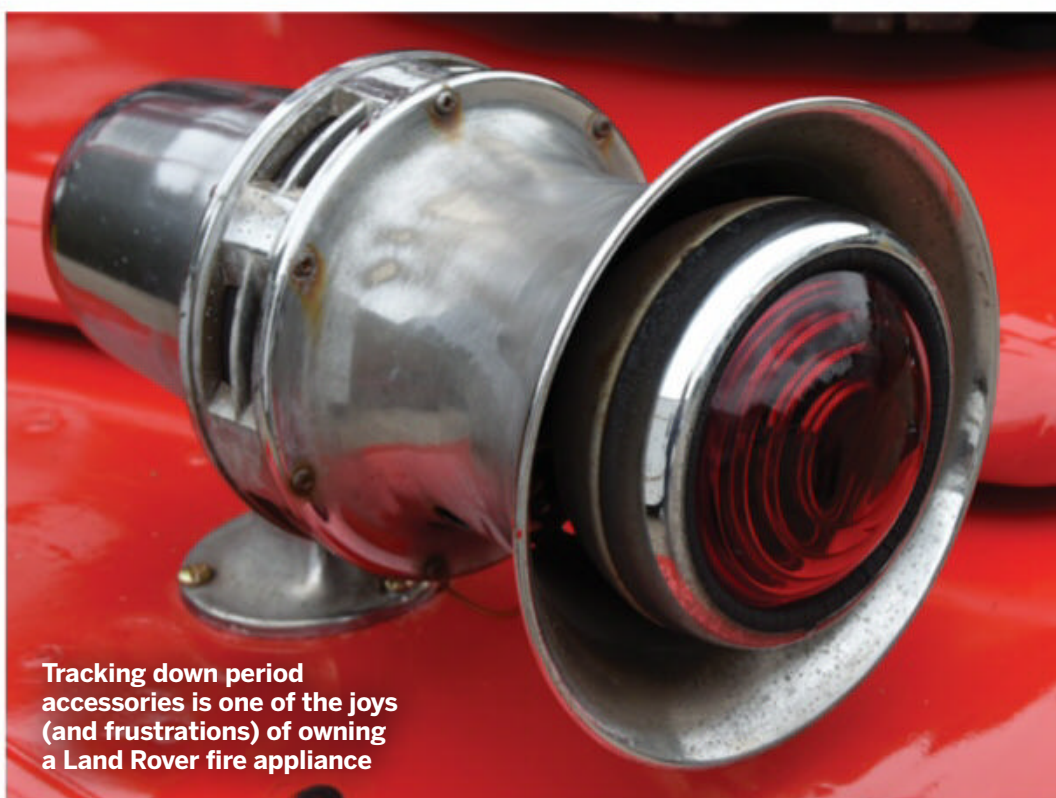
The Firefly at Tower Garage — Graeme wasn't kidding about his passion for Land Rovers, as there were several vehicles parked on the premises



PICTURES: BOB WEIR

BELLS AND WHISTLES

Land Rover fire appliances are rare in Scotland, and usually attract a lot of attention — Bob Weir went to Laurencekirk to meet ex-fire fighter Graeme Godsman and his Firefly model »



Tracking down period accessories is one of the joys (and frustrations) of owning a Land Rover fire appliance



LAURENCEKIRK is a small town next to the main A90 trunk road between Dundee and Aberdeen. Apart from being home to some old Land Rovers, its main claim to fame is the unusual pastime of making snuff boxes. These Victorian boxes feature a special type of airtight hinge invented by James Sandy, and are sought-after antiques.

The same could also be said of Land Rover fire appliances. Particularly popular back in the 1960s, they were mainly used by industrial companies as a back-up to the local fire brigade. The survivors were eventually sent for auction, and many have ended up in the hands of private collectors.

Unlike other Land Rovers the majority of these appliances spent most of their service career kicking their heels, with the occasional training exercise to relieve the boredom. The lucky ones were parked in garages out of the weather, and these are the vehicles that have survived into preservation. One of the benefits of buying one of these old classics is that the majority have very low mileage.

Graeme has lived in the Laurencekirk area all his life, and is a motor mechanic by trade. He worked for a local firm to gain some experience, before deciding to start his own business. Tower Garage has now been going for almost 30 years. They offer specialist servicing and testing to customers in the Tayside and Aberdeenshire area.

“We are able to service and repair most makes of vehicles including cars and light commercials,” he explains. “We currently employ four people who are highly skilled in mechanical work, servicing, and MoTs. We have built up the garage over the years, and most of our business comes from personal recommendation.”

Graeme first got interested in Land Rovers while he was still serving his apprenticeship back in the 1980s. “The garage where I was working had the contract for servicing the local Territorial Army Land Rovers,” he recalls. “They had about a dozen vehicles, mainly Series IIIs. I soon learned a lot about them, because the TA insisted that the vehicles had to be kept in tip top condition. For example the engines were replaced once they had clocked 60,000 miles, irrespective of whether they were still running properly.



Moreover if there was a malfunction with any part, it had to be replaced straight away. The TA also insisted that the annual inspections were far more stringent than your average MoT. Every rivet had to be checked, and nothing was left to chance. You soon learn a lot about a vehicle, if you are carrying out inspections from the bottom up. Parts that were rejected by the TA were always put to one side. The garage soon accumulated a supply of used spares that were suitable for other Land Rovers in the area."

By the time Graeme got around to starting his own business, he was hooked. "The first vehicle I bought was a Classic Range Rover that I used for trialling. I've always enjoyed off-roading, and there are a few good clubs in the area. The Range Rover has since been moved on, and I currently use my 90 for off-road work.

"I acquired the 90 in 1997. It was originally new to a local farmer, and by the time I got hold of it the vehicle was looking a bit rough. I have modified it extensively over the years, and it is quite a mean machine. Extras include a 300Tdi, beefed-up suspension, a winch, and a set of Spanish Insa Turbo tyres. I use it for trialling with Edzel Off-Road Club, of which I am a founder member.

"In addition I own a standard Discovery, and a recently restored Series IIA. The IIA came from just up the road in Stonehaven. I'd known about the vehicle for many years, as the owner was one of my customers. He used the IIA as his regular runabout, and drove it down to England on several occasions. He eventually decided to move the Land Rover on, and I bought it three years ago. Among other things, I have fitted a new chassis. I've also just acquired a 1959 Series II which I'm also planning to do up in the near future."

Acquiring an old fire appliance is an unusual choice for even the most committed Land Rover devotee, but in Graeme's case he did have some history. "I was a volunteer fireman for the Laurencekirk fire station for many years," he explains. "I've always had a passion for old fire appliances, so in many ways the Firefly was the perfect choice."

Graeme bought the Firefly back in 2016, after he spotted an advert on eBay. "The seller came from Nuneaton and was disposing of the Firefly on behalf of an older gentleman," he recalls. As things turned out the appliance did not fetch the asking price, but I decided to ring him up anyway. Fortunately, we were able to come to an arrangement. He didn't know a lot about the vehicle's history, although the Lucas connection

A brief history of Land Rover fire appliances

Land Rovers have been used as fire appliances since the days of the Series I. First introduced in 1949, Solihull carried out the conversions in-house. Management's intention was to produce a standard model, but because of the varying demands of the fire brigades this quickly proved impractical.

This was not what Solihull had intended, and costs soon began to mount. In 1957 Land Rover management decided to solve the problem once and for all, and set up a Special Projects department under the leadership of George Mackie.

After a series of meetings, it was decided to out source the conversions to specialist coachbuilders. To ensure quality control, companies that were considered suitable were granted Land Rover Approval. This meant that the all-important manufacturer's warranty was still valid.



Following agreement with Land Rover, the Firefly model was introduced by Fire Armour of London in the late 1950s. The appliances were mounted on a Series IIA chassis supplied by the parent factory.

Fire Armour was eventually taken over by the George Angus Group, who merged with Hampshire Coachbuilders in 1963 to become HCB-Angus. They continued to use the Firefly name for Land Rover appliances until the 1970s.

was obvious from the sign. He also told me that the Land Rover had been in long-term storage for over a decade."

Fortunately a chance meeting at the Scottish Land Rover Show at Ingliston last May shed some light on the mystery Graeme takes up the story: "I was put in touch with Aiden Fisher at the HCB-Angus Archive. I sent him some of the vehicle's details, and he was able to come up with some useful information. Apparently it was given the serial number 2320 by HCB-Angus, but the chassis was actually supplied by Saville Motors. I believe Saville was a subsidiary of Lucas at the time. They filed the job with the number 1098. The vehicle was standard specification, and the order carries the phrase 'free issue'. This implies that Saville gave HCB the chassis without asking for payment. Perhaps they had the chassis lying around for some time, and just wanted it off their hands. Mr Fisher was unable to confirm when it was stood down as a factory appliance, and put into preservation."

The appliance would originally have been used at one of





"It's a different beast to drive from conventional models, but you quickly get used to the handling characteristics"

Joseph Lucas' factories, although the exact location is unknown. During its heyday, Lucas was involved with many products, and owned several factories in the Midlands. According to Graeme, his Firefly may have ended its service career at a plant subsequently taken over by the battery giant Yuasa. In 1988 Yuasa Corporation of Japan bought a 50 per cent share of Lucas Batteries Ltd based in Birmingham. The renamed company was Lucas-Yuasa Batteries Ltd. In 1997 Yuasa Corporation bought the remaining 50 per cent, and changed the company name to Yuasa Automotive Batteries Europe Ltd. The company continues to market the Lucas brand batteries under licence.

"An interesting fact about the Firefly was that the registration number had been changed from a J reg to a H reg. When it was working at Lucas Industries, the Land Rover would not have been taxed for road use. The vehicle was only registered in 1999, when it was eventually sold on. It was then allocated the number VVP 898J. We can only assume that there must have been some confusion as to when the Land Rover was actually built, and when the true facts became known the reg number was changed. The correct date of manufacture is the latter end of 1969."

For the record, the Land Rover's serial number is 25118319G. Graeme says that the Firefly is obviously a different beast to drive from conventional models, but you quickly get used to the handling characteristics.

I'll leave the final word to Graeme. "2017 was the vehicle's first summer on the show circuit, and it is already attracting attention. The locals are also starting to get used to seeing it on the road, and it always gets a lot of smiles. People still have a fascination for old fire appliances, and my connection with the local fire station is well known in the area. The Land Rover is also starting to pick up its fair share of trophies. I plan to take it to several rallies during this summer, and then it will be stored away for the winter. I enjoy owning the vehicle, and intend hanging on to it for the foreseeable future."



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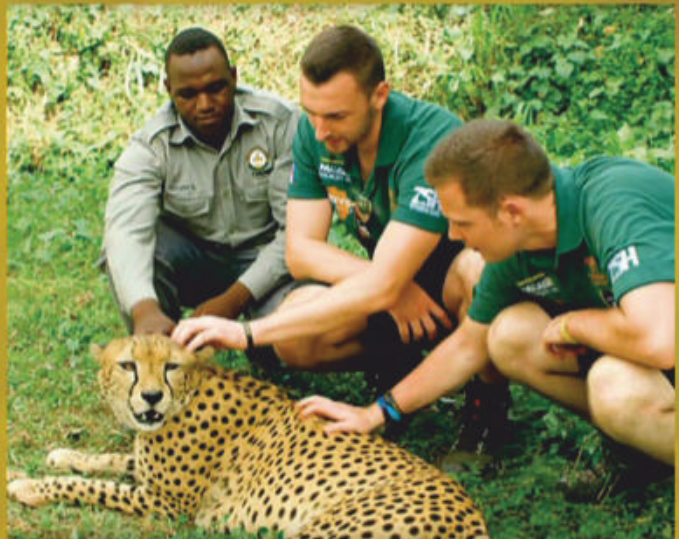
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STORY BY DAVE PHILLIPS PICTURES BY DRIVE 4 WILDLIFE



Above: The base vehicle, a 2006 ex-military Defender 130 and, below, ready to work in the Ugandan bush





Mock-up image of the base vehicle showing possible sponsor's logos



Fund-raising events included a summer ball to help raise cash



Presentation of the finished conversion to the UWEC in Uganda



Checkout Drive4 Wildlife's YouTube videos (see panel on opposite page)

T'S first light in the steamy depths of the jungle and the sound of nature is a deafening symphony of insects, wild birds and mammals. But a giant gorilla raises an eyebrow at an unusual sound getting ever-closer. It's a familiar noise here in the UK, but not in the Ugandan bush. It's a Td5 engine and it's under the bonnet of a distinctive green Defender 90.

Here at LRM we get to see some wonderful — and occasionally weird — Defender conversions. Campers, overlanders, off-roaders, speed machines and every sort of mobile business imaginable, but they all have something in common: they are created to improve the lives of their human owners. This one however exists solely to improve the survival rates of some of the world's most endangered animals, and has been custom-built, accordingly.

The fragility of life on our planet has been brought into sharp focus recently by the horrific bush fires that have raged across much of Australia. At the time of writing, hundreds of homes and tens of human lives have been lost, but the tragic sub-story is that at least half a million wild animals have perished in those flames and it is thought that some species will have been made extinct.

Extinction of our fellow species is nothing new. But it is a problem that's expected to get a whole lot worse, with around one million species at risk due to the ever-rising human population of our planet and its consequences, including climate change. Happily there is a younger generation determined to change all that.

A year ago, Redmond Boulton, 25, brothers Tyler, Cameron and Aaron Whitnall, and videographer Will Ferguson, embarked on a three-week, 5000 km drive around Lake Victoria in Africa, calling in at conservation charities in Tanzania, Kenya and Uganda. It was sponsored by the Paradise Wildlife Park in Broxbourne and the Zoological Society of Hertfordshire and billed as the Drive 4 Wildlife. They were shocked by what they witnessed.

"Poaching is a huge problem," says Redmond. "Whether it is locals slaughtering animals for bush meat to eat or killing elephants and rhinos for the ivory trade. There is also an illegal trade in wild animals.

"The answer is to educate the locals, but we quickly realised that the anti-poaching patrols and animal rescue teams needed better transport. They were driving out into



the bush for days at a time in any vehicles they could get their hands on, and many were not particularly roadworthy. They needed something purpose-built for the job and so we made that our mission.

“We did our Drive 4 Wildlife in a Toyota Land Cruiser but we realised that a Land Rover would be much better with its unrivalled off-road ability. A Defender could also be adapted to their needs.”

Back in the UK, the team set about raising £40,000 to buy a Defender, have it converted and shipped to Uganda. That they hit their target so quickly was helped no end by generous sponsorship. All the main sponsors paid £2500, for which they each got a logo on the vinyl-wrapped green Defender. The headline sponsors who donated £5000 got a bigger logo.

The base vehicle was a 2006 ex-military Defender 130 that had just 35,000 miles on the clock and previously served on the Falkland Islands. It was a high-capacity twin cab — ideal for the customisation the team had in mind. This included a roll cage (fabricated by a local company that normally builds bouncy castles!), DB12000i winch and bumper kit, upgraded LED lights all round, snorkel, tracker and immobiliser.

A travel fridge for medicines required on animal rescue missions was also fitted, along with an inverter for charging equipment like radios, phones and drones while they were out in the bush for days on end.

The drones, incidentally, are one of the most effective methods of spotting and tracking poachers. But it is a dangerous job, says Redmond: “The majority of people out there carry guns on them. We had extra lights fitted because they help to scare poachers off.

“On a patrol, there would usually be two to six people, some of whom would travel in the rear load bed. Animal rescue also needs as many people as you can fit in, because some of those mammals are very big to manhandle. Even a baby elephant is very heavy.”

The vehicle was flown to Entebbe airport in Uganda just before Christmas. It is now based at the Ugandan Conservation Wildlife and Education Centre, which is conveniently situated between the country’s two biggest national parks — the Queen Elizabeth National Park, which is west of Uganda, and the Murchifom National Park. “Together they cover most of Uganda, really,” says Redmond, who returned to Africa to hand over the Defender. The team at the centre were delighted, knowing that they finally had a

**Probably the first
camo wrap that
actually needs to
be camouflaged
for safari**

vehicle up to the job.

Another plus is the fact that the Defender is pretty basic and can be repaired out in the wilds without taking it to a specialised workshop. And that, of course, is also why they chose a Td5-engined model with fewer complicated electronics. With just 35,000 miles under its belt, they should be able to look forward to at least another 200,000 miles of reliable motoring.

While out in Uganda, the team also shot a promotional video to raise awareness of the charity’s invaluable work in stamping out poaching. Redmond says: “We would love it to get on TV, but even if the worse comes to the worse, it will still be seen by millions on social media.”

Next time some do-gooder moans to you about gas-guzzling Land Rovers damaging the planet, just tell them about the inspirational work these young guys are doing. It should make all Land Rover enthusiasts proud.



AS SEEN ON YOUTUBE...

The team have released several You Tube videos of their work, with more to come. Check out these:

- youtube.com/watch?v=sQ95hjxo6sU&t=1s
- youtube.com/watch?v=5MfEWFCnoCg&t=2s
- youtube.com/watch?v=_X07LqAkS7M

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WHEN John Edwards retired from JLR in June 2018 he was keeping a promise he'd made to himself and his family 17 years previously: that he and his wife would retire from their respective full-time jobs at or around the age of 55. As he says when we meet, "one life, live it, was always my mantra and I was determined to be true to it."

He had celebrated his 28th anniversary at the company in April that year and had just spent four and a half very intensive, full-on years building a new division pretty much from scratch. Undoubtedly on a high, it was a good time to step down.

John joined what was then the Rover Group in April 1990 as a marketing research manager. He had graduated from Liverpool John Moores University in 1984 with a BSc in Sports Science and had followed this with a post-graduate diploma in Marketing Management. As he says, it was not the obvious path for a senior auto industry executive to have taken! After two and a half years working for various marketing agencies in London he landed at Rover, which was at that time owned by British Aerospace. Over the following

28 years he held several of Land Rover's most senior positions including Managing Director of Land Rover UK and Regional Director roles for Europe and Overseas, before being made Global Brand Director and appointed to the company's Executive Committee by Chief Executive, Prof. Dr. Sir Ralf Speth. John spent three years leading the Land Rover business, during which time the Range Rover Evoque (L358), fourth generation Range Rover (L405) and Range Rover Sport (L494) were launched. And then in late 2013 he was asked to head up the new Special Operations business that would also embrace Land Rover's aggressive ambitions to create a heritage division.

John's career at Rover Group, Land Rover and JLR embraced four very different owners: BAE, BMW, Ford and of course TATA, and it is also notable that he is not an engineer. The old Rover Company had always been led by engineers and engineering, and for many years the engineers had little time for anyone with any other skill or specialisation. When Rover employed its first professional designers in the mid-1950s they were referred to rather disparagingly by the engineers as 'stylists' and 'flower arrangers'.

"Engineering continues to be fundamentally important to the business," says John. "But designing, building and selling cars is a team sport and a successful team needs a diverse

John Edwards spent 28 years at Land Rover and held many senior management roles. From 2013 he headed the company's Special Operations business. This is his story...

LAND ROVER LEGENDS

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JOHN EDWARDS



range of skills and capabilities. I've been an obsessive rugby fan since childhood and believe that rugby can provide a great model for successful business teams. You need to understand the capabilities, skills and attributes of everyone in the team and organise and empower them to get the very best results.

"Throughout my time with the company I've always believed in trying to get the best from my team and as a marketing man I've always tended to have roles at the sharp end of the business, where the focus is on the sales process, how the brand and the product is perceived in the marketplace, how we motivate our retailers and partners, and how we satisfy our customers."

Land Rover has experienced huge changes over the years and I'm very interested in John's views on the multiple changes of ownership. "Rover and Land Rover was a bit of a cottage industry when I joined in 1990," he says. "Most of the company's people were deeply passionate and enthusiastic about the product, which was good, but things needed to change. There had been several very real moments in the 1980s when the company was at risk but it had pulled through, sometimes by the skin of its teeth. BAE was never going to be a welcoming home for Rover and the original acquisition was obviously politically motivated. As soon as BAE had a meaningful offer on the table it was happy to do a





deal and get rid of a carmaker it never really wanted in the first place.

“Over the next 15 years Land Rover successfully navigated three complicated transition periods: from BAE to BMW, from BMW to Ford, and from Ford to TATA. We embraced the cultural differences of multiple owners and the uncertainties that changes of ownership can bring, and we transformed the business from a cottage industry to a successful global enterprise. To be honest, it was always clear that the business needed to change, and I’m fortunate to have been at the right place at the right time to have been part of the transformation.

“BMW was an interesting owner and we at Rover undoubtedly learned a great deal from them – primarily engineering excellence and brand focus – but Rover Cars was always going to struggle because in reality it was competing with BMW, unlike Land Rover which was complementary to the BMW business. I think BMW was probably too hands-off, especially on the car side of the house, and by the time they became hands-on it was too late. They undoubtedly contributed to the development of the third generation L322 Range Rover but it was not a one-way process, and the L322 was primarily designed and engineered by a British team out-stationed in Munich that was supported

and assisted by BMW people. BMW learned a huge amount from the Land Rover team about four-wheel drive technologies, SUVs and off-road vehicles, none of which were in-house skills for them prior to acquiring Rover, and they were able to use this newly acquired knowledge immediately in the development of their own X Series vehicles. It’s just a pity that the marriage ended so badly.

“The Ford era was equally interesting but different in many ways. We had an all-new board, led by Bob Dover, that was completely focused on the Land Rover business for the very

John’s often in front of the cameras, here at the 65th event at Packington Park

“Of all the owners, TATA has undoubtedly been the most rewarding. JLR has thrived under TATA’s ownership and is now an established global automotive player. Just look at the number of new vehicles that have been introduced since they acquired the company”

first time. Ford were enthusiastic about the prospects for Land Rover and very supportive although we had to be pretty assertive in protecting our DNA when developing new products. There were many interesting and energetic conversations in Detroit where the Land Rover team fought passionately for what they believed in. The initial products launched under Ford ownership (the L319 Discovery 3 and the L320 Range Rover Sport) proved to be great Land Rovers, true to our DNA and true to our brand values.

“Under Ford ownership, Land Rover became part of the Premier Automotive Group together with Jaguar, Volvo, Lincoln and Aston Martin, and Ford later decided to merge together the Jaguar and Land Rover businesses to create Jaguar Land Rover. This was driven by a desire to encourage operational efficiencies and reduce costs rather than by any strategic brand logic; after all, the two businesses were at that time completely independent but had head offices less than 20 miles apart. I have to say, though, that the merger was extremely difficult with both companies having very different cultures. I think it remains a challenge for JLR to this day.

“During the Ford years I had huge admiration for Matthew Taylor, a Brit who’d served in the Royal Navy and seen action in the Falklands before he joined Ford in 1985. He was made Sales and Marketing Director for Land Rover after Ford bought us in 2000 and when Ford put together Jaguar Land Rover Matthew added the Jaguar side to his responsibilities. In 2003 he was appointed Managing Director of the Land Rover business but he had appointed me to the role of Global Marketing Director for Land Rover in 2000, so he was my boss for some time. He had real vision, real passion for the Land Rover brand and did a great deal to prepare the company for the changes that followed. He was an excellent leader, truly inspirational, and was popular at all levels of the company.

“Of all the owners I experienced, TATA has undoubtedly been the most rewarding,” says John. “They came with no preconceived ideas, were prepared to listen and learn, and gave us a great deal of freedom. There is no doubt that JLR has thrived under TATA’s ownership and is now an



JLR's Classic Works — “the most impressive facility in the automotive world, bar none”

“I wouldn’t say Ralf was easy to work for, but he was driven, ambitious, passionate and tireless in his pursuit of growth for the business. He pushed his team hard and set the bar very high; his personal commitment to the business has been huge and required him to be away from his family in Germany for weeks”

established global automotive player. Just look at the number of new vehicles that have been introduced since they acquired the company, the market-leading popularity of most of them, the levels of investment that have been made in both the UK and overseas, and the massive increase in the scope and scale of the company’s workforce. It has been a truly remarkable ten years! Mr Tata himself has been a passionate supporter of the business, through thick and thin, and JLR owes a great deal to his support and leadership.

“And, of course, TATA’s decision to appoint Ralf Speth as CEO was an inspired one that has led to the success JLR has enjoyed over recent years. I wouldn’t say that Ralf was easy to work for but he was driven, ambitious, passionate and tireless in his pursuit of growth for the business. He pushed his team very hard and he set the bar very high; his personal commitment to the business has been huge and has required him to be away from his family in Germany for weeks on end. JLR wouldn’t be where it is today without his leadership.

“When Ralf asked me to take on the Global Brand Director role in late 2010 I inherited a strategy which proposed to launch the new Evoque model as a Range Rover but without a Land Rover badge. There were concerns in some quarters that it wasn’t a ‘real’ Land Rover and those of us with long memories recalled the similar debates that had raged regarding the Freelander. I felt very strongly that Land Rover’s DNA was an important differentiator for the Evoque and as such the Land Rover brand had to feature. This brought to a head all the issues that had never really been resolved regarding the relationship between the various Land Rover vehicles and the overall Land Rover brand. At the last minute my team and I were able to persuade the business that Evoque should carry the Land Rover badge, but this triggered a wider discussion regarding our product strategy.

“This ultimately led to what became known as the ‘three pillars strategy’ that finally brought together Land Rover’s product range into a cohesive rationale. There was a lot of heated debate and argument about our proposals and our Design Director Gerry McGovern, having initially doubted the strategy, ultimately became our biggest advocate and was



Three pillars and three families of Land Rover vehicles: Defender, Discovery, Range Rover



very influential in getting the business on-board. This strategy is still at the heart of Land Rover’s product positioning today, the three pillars being the Defender, and the multiple variants of the new one, Discovery and Range Rover product families, each with various models such as Sport variants, Evoque and Velar.”

I always had the impression that the creation of a Heritage business within JLR was something Ralf Speth was particularly keen to see happen, and I am interested to hear John’s views on the creation of the Special Operations division. “Ralf was undoubtedly very committed to the creation of the Special Operations business and I was both surprised and flattered when he asked me to lead it, not least because of the classic car elements of the business plan such as the historic racing, the Reborn and continuation vehicles programmes and the classic parts business.

“I don’t consider myself a serial petrolhead and I’m not a classic car fan with a garage full of old cars, so I questioned why he wanted me to do the job. His answer was interesting. He wanted me to do the job precisely because I wasn’t a classic Jaguar or Land Rover enthusiast, and because he believed I would be focussed on the business logic of what we needed to do. From the outset, the Special Operations business was not a piece of self-indulgent window dressing





“The original Heritage plans included a museum, off-road course, racetrack and other things. John won’t be drawn on the details but says the original plans for Special Operations were ambitious. However, he also suggests that we would be wise to ‘watch this space’”

but an operation that needed to deliver financially, just like the rest of the company.

“Special Vehicles or Special Operations activities have been part of the company since the 1980s, but what Ralf had in mind was something much more ambitious than anything that had gone before. Ralf is a classic car fan himself and personally owns a fleet of Jaguars and a Series I, amongst other things, and I’ve always thought that running the new Special Operations business would have been his dream job! He was certainly a demanding customer and for the record we always charged him full rate!”

I suggest to John that in the past Land Rover has never had a serious commitment to its heritage and history in the same way that other manufacturers have, such as BMW, VW, Mercedes and even the likes of Peugeot and Vauxhall. I wonder whether Ralf Speth, as an ex-BMW man, feels that this is an important missing piece in the JLR jigsaw?

“I agree that Land Rover probably never had the headroom to invest meaningfully in its heritage. In the past the approach was to hand over vehicles to the custody of what eventually became the British Motor Industry Heritage Trust which is now the British Motor Museum (BMM) at Gaydon. I’m sure this was done with the best of intentions back in the day, with the objective of saving and securing important vehicles for posterity, but BMM is now an independent charitable trust with a museum dedicated to all vehicle brands built in the UK as well as being a conference centre and an exhibition and events venue, so it has a far wider agenda than just Land Rover.

“Nevertheless, Land Rover has always been aware of its heritage and the importance of that heritage in terms of the values of the brand and in connecting the past with the vehicles in the current product range, and that’s why heritage was an important component in the business plan for Special Operations.

“From the outset we had very ambitious plans that revolved around four businesses: Special Vehicles, which had originally been created in the 1980s to make limited editions of production vehicles such as the Range Rover Linley, the various Autobiography models and so on; Vehicle Personalisation, which is about giving the customer the

Defender Works V8 sold out in weeks

ability to specify their new vehicle from a potentially infinite range of options; Branded Goods, which is about merchandising and licensing the Land Rover brand; and finally the Heritage operation, which eventually appeared as JLR Classic.

“And within Heritage we planned to create a heritage workshop, construct continuation vehicles, restore factory-approved Reborn vehicles, buy and sell factory-approved classic Jaguar and Land Rover vehicles, and create a network of ‘approved partners’ who could undertake outsourced work. In a nutshell, Heritage was to be about ‘nurturing, celebrating and leveraging’ JLR’s history”

I’ve also heard that the original Heritage plans included the creation of a dedicated museum, an off-road course, a racetrack and many other things all wrapped up as a ‘Brand Experience Centre’. John won’t be drawn on the details but says there is no doubt that the original plans for Special Operations were incredibly ambitious, and not everything on the wish list came to fruition. However, he also suggests that we would be wise to ‘watch this space’!

And only some eight months after Special Operations was launched, and to the surprise of many commentators, JLR announced that it had purchased the Dr James Hull Collection of 543 mainly British cars for an undisclosed sum, although the collection had been offered for sale a few months earlier for around £100m. The Hull Collection included 130 Jaguars but very few Land Rover vehicles, and several hundred other vehicles that had absolutely nothing whatsoever to do with JLR in its current guise. It was rumoured that Mr Tata himself had been keen to make the purchase and maybe it formed part of the abortive plans for a museum. Either way, JLR has been steadily disposing of unwanted chunks of the collection ever since.

Aside from distractions such as the Hull Collection, John brought together a new leadership team that included many from outside JLR and there can be no doubt that progress against the ambitious plan was not far short of incredible, including the construction of a brand-new facility at Ryton-on-Dunsmore, south of Coventry, and at a second site at Fen End.

“From a Classic perspective, the Jaguar side of the business



1948 Amsterdam Show car? Pre-pro L07 bought by JLR Classic



£240,000 SVAutobiography Coupé never made it to production

was easier to implement in terms of the continuation and Reborn vehicles,” says John. “Back in the day Jaguar had unprecedented racing success, typified by the D-Type’s winning pedigree at Le Mans, which has meant that these original vehicles and other competition Jaguars are hugely collectable and very valuable. It was an easy decision for us to take to build factory toolroom continuation vehicles, starting with the Lightweight E-Type and followed by the XK-SS and D-Type. The Land Rover side was always going to be more difficult but in due course we announced the Reborn programme for the Series I and early first-generation Range Rover.

“The Land Rover Reborn programmes were about signalling to the world that JLR was committed to its own heritage. This includes the remanufacturing of parts, although this is an incredibly difficult and expensive task given the sheer number of parts and the fact that engineering drawings have in many cases been lost. When I stepped down Jaguar Classic was very profitable, Land Rover Classic less so, and we learned the hard way just how much it costs to restore a Series I or a 1970s two-door Range Rover to a high enough standard. But the team is fully committed to both Jaguar and Land Rover Classic, as shown by the opening of the Classic Works facility, arguably the most impressive facility in the automotive world, bar none.

“There was also a great deal of progress on the Bespoke Vehicle and Special Vehicle divisions, including the launch of the £150,000 550PS supercharged V8 Range Rover SVAutobiography, although I’m still saddened that after I retired the company decided not to proceed with the two-door Range Rover SVCoupé special edition. I thought this was a stunningly beautiful Range Rover that would have been a real tribute to the purity of the original Range Rover design.”

And Defender special projects figured highly on the Special Operations agenda. “When production halted on the original Defender in early 2016, we knew its replacement was some way off. The company did all it could to extend production because no-one wanted this long gap between the end of the original and the appearance of the new Defender. Creating special editions like the Works V8 was a way to meet the demand for a high-performance Defender as well as keeping the Defender name in the spotlight and showing that the company was committed to the aftermarket conversions sector. The initial production run of Works V8s was sold out almost immediately, and despite the launch of the new model it wouldn’t surprise me if there were further limited runs of re-manufactured original Defenders.”



Anthony Joshua with his Range Rover SVAutobiography



Range Rover Reborn announced in 2017

At this point it seems apt to ask John what he thinks of the new Defender. He was obviously expecting the question and had given it some thought. “I love the design, both inside and out, and I love the extreme built-in capability of the product. It’s far more accomplished and much more comfortable than the original,” he says. “But it is a thoroughly modern vehicle that is not a DIY-fixer. In that sense it is far removed from the original, but the reality is that although we all loved the old Defender it had been selling in pitifully small volumes for years. We were all fans of the Defender, but not enough of us wanted to buy it! I think the new Defender will be a huge success, which is what it needs to be. Whether existing Defender fans buy it in any numbers is probably unlikely.”

If the new Defender is going to be bought by a different kind of buyer, I wonder whether this creates the space for a new base utility vehicle, more in keeping with the ethos of the original utility Land Rover and the Defender? “We would have loved to have created an entry-level Land Rover, a base model with a starting price of, say, under £20,000 that still met all the key brand values in terms of capability and so on. But try as we might, we couldn’t make the numbers work. New Defender clearly creates space for a more affordable vehicle positioned below it, so I guess I’ll be joining you in watching this space over the coming years! My own view is that if the company could find reliable capacity to build a quality vehicle that met a significant market demand, then it would do it”.

And what about the vast amounts of on-board tech, I ask? “Every car manufacturer is loading their cars with technology and that is what buyers want, even if the truth of the matter is that they don’t use the vast majority of it. And much of this tech needs to be made bulletproof if connected and autonomous vehicles are ever going to become a reality, which in a sense means that every time we buy a new vehicle we are all participating in the ongoing testing and development of that technology. The problem is that the tech is pretty cheap to add when a car is being built but can be very expensive to fix when it goes wrong, and fixing it is typically beyond the capability of most home mechanics. I’ve just taken delivery of my new Range Rover. It’s a hugely impressive car, packed full of on-board technology, but I only use a fraction of it!”

WILD INO

Sean Reagan and Mittie Roger leave the US to make a new life for themselves as they travel through Latin America

T conjures up the smell of chocolate and spice, steam rising off of freshly-roasted corn; the sounds of multilingual chatter, and warm, welcoming people, dressed in vibrant, embroidered textiles. We adore Oaxaca City. A mix of many cultures, a few foreign but most homegrown, there's nothing quite like roaming the city streets, gazing at the majestic, baroque architecture and breathing in the local coffee wafting out from the cafes.

With the wilds of Oaxaca (pronounced wah-ha-ka) being relatively nearby (seven hours isn't too bad, right?), my partner Sean Reagan and I decided to take La Poderosa, our 1995 Land Rover Defender, for a visit. Ascending through the cold, verdant mountains filled with brisk fog and occasional shafts of bright light, we can see the perfectly blue sky stretch out over the cliff edge as we casually cruise along.

It's a dreamy day for a long drive. At the peak of the mountain, we stop at what appears to be a European chalet called The Overlook (El Mirador) for quesadillas and hot chocolate.

Dressed in shorts from the humid lowlands, we need to warm up. The lively conversation inside the rustic cottage is like music, filled with sounds we can only appreciate without understanding. We later learn that they are speaking Mixe, one of the 21 languages spoken by different indigenous groups in Oaxaca.

We quickly try to engage in conversation – asking them words in Mixe as they ask us words in English. Mikep'utsy – good day. Jam wëtijtēm – we are travelling. While all this fun is happening, we don't see the storm clouds gathering on the horizon. From indigo to black, by the time we notice we can't get back to the road fast enough. With nothing but our tattered Surrey soft top to protect us, we know this may get serious.

Lightning cracks on the horizon, and we drive the highest ridge of the mountains while the thunder growls louder. We're above the tree line for a while, running alongside the ridge and feel exposed. Soon the rain descends, and thankfully, so do we – down into the Oaxaca Valley, toward the city. Pouring down by the bucket-full, drenching us and everything that we have with us, we try to remember to be grateful for the rain and the life that it brings. Just then hail bounces off the bonnet and shoots down outside of our non-existent windows, ricocheting around the back of the Land Rover. Is this a joke?

AXACA

Story: Mittie Roger Pictures: Sean Reagan



But it doesn't stop there. Next is snow. And then we come to a complete stop in a traffic jam. Perhaps there's an accident ahead? We aren't sure. While the rain continues in an angled mist, we watch the travellers get out of their cars to touch the piles of snow that have gathered on the sides of the road – something pretty uncommon for this region. While they're enjoying a roadside ski holiday, we're freezing to death but at least laughing hysterically about it. What else can you do?

Finally, in the city, we wade through floodwaters on the outskirts to get to our hostel. Both a gorgeous and gruelling trip to arrive in the city – but man oh man – is it worth it! Immediately we feel the artistic bohemian vibe of this vivacious place. Filled with street art, live music and foodie havens, this is where the cool go to relax.

Oaxaca's revolutionary street art is one of the major attractions of the city. A hotbed for social and political uprisings, the artists who reside in the city are constantly creating new thought-provoking masterpieces on the downtown walls. A UNESCO world heritage site, the tradition of mural painting gives voice to dissent, often focusing on counterculture imagery, such as indigenous symbols, revolutionary heroes and corrupt officials with horns or pig faces.

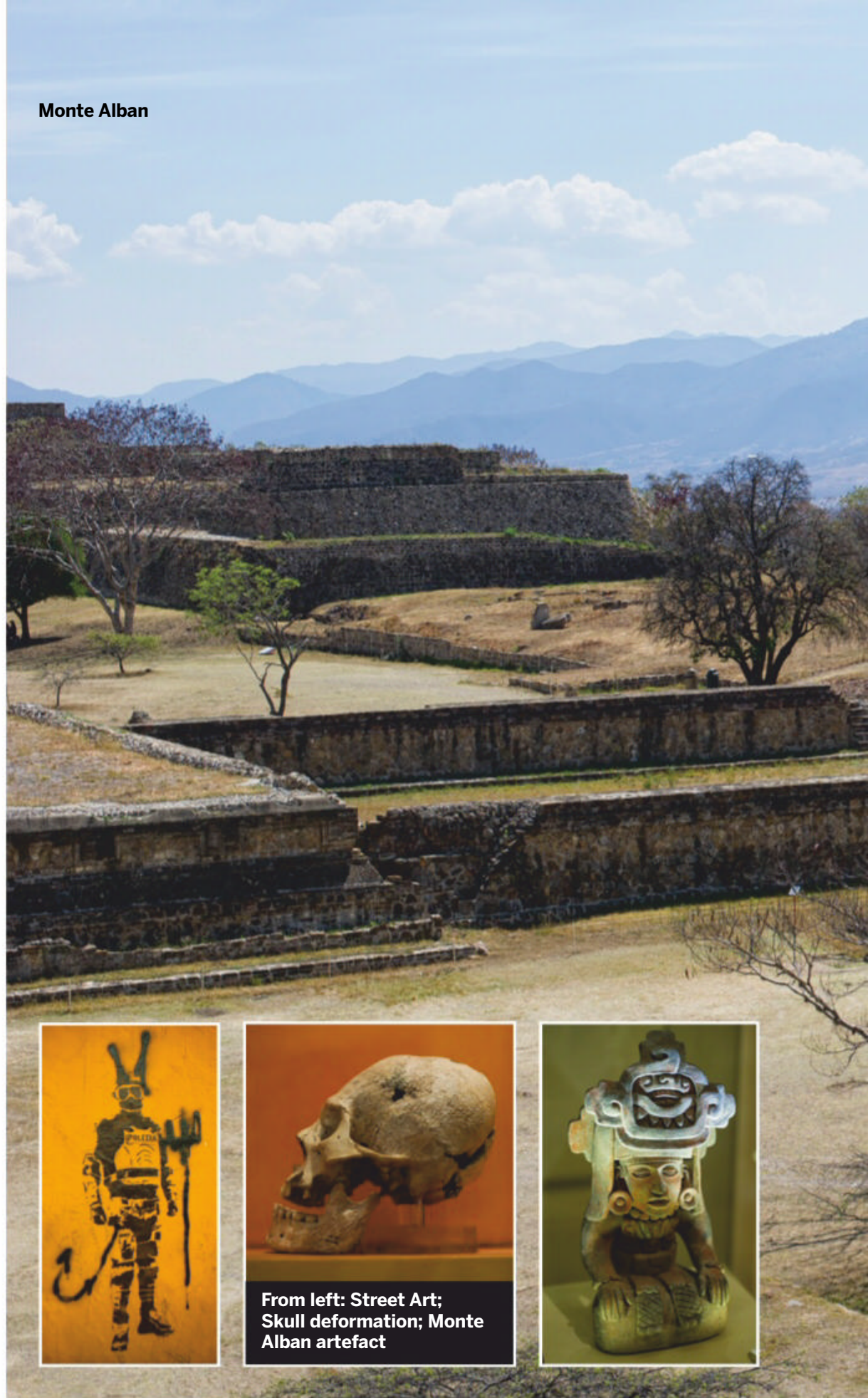
One of our favourite destinations is the Instituto de Artes Gráficas de Oaxaca (IAGO), a huge art library filled with pre-hispanic art books and exhibitions founded by legendary Zapotec artist Francisco Toledo – a contemporary voice for Zapotec language and culture. The downtown is filled with gems like this – art galleries, museums, print making studios and more. We spend hours in the Centro Cultural Santo Domingo, a museum displaying pre-Columbian works and chronicling the Spanish influence in the area. It is housed in an exquisite ex-convent featuring stunning architecture, fountains and murals.

Filled with unique savoury and sweet delights, and detailed artisan works from textiles to black clay, we could spend all day mooching around Oaxaca's famous markets, trying not to buy too much. There's just nothing like it! Take Mole, for example, a thick sauce created from chocolate, spices, nuts and chilli peppers served over chicken and rice. It's delicious and totally one-of-a-kind (it's Sean's favourite). Or Popo, a beverage that is pure chocolatey foam dusted with crushed nuts.

Oaxaca, the land of the Zapotec people, is home to a pre-Columbian civilisation that dates back 2500 years. Spread over three Valleys (with a veritable no man's land between them), that is precisely where Oaxaca, the capital of the state, sprung up. Just outside the city, archeological ruins abound, like the first major city in all of Mesoamerica: Monte Alban. Home to the so-called 'cloud people', the Zapotec city rivals the largest in Mesoamerica and dates back to 1150 BC.

We head out onto the grounds and begin to look at some of the impressive initial structures, but we still have no idea

Monte Alban



From left: Street Art; Skull deformation; Monte Alban artefact



Oaxaca City — famous for its rich cultural diversity, unique cuisine and fascinating history

what we're in for. Monte Alban is more immense and stately than we could have even imagined. Famous for advanced architecture and engineering, including irrigation networks, as well as writing and arts, they also had the fascinating tradition of skull deformation for the elite to show prestige and accentuate beauty.

We crest the first hill and look over the central Valley of Oaxaca. With an excellent view, this tactical location put them in the perfect position to defend themselves against any threat. The Conquest Slab at Monte Alban recounts the tale of numerous leaders, some of which relinquished their autonomy and lived; others had to be overthrown. Those who were taken by force are pictured with their heads upside down. What caused the decline of this grandiose metropolis is still unknown. The Zapotecs continued to flourish in the post-classic period, though, moving their capital to a small religious centre, Mitla.

Naturally, we follow their trail. Mitla, just 27 miles south east of Oaxaca City is a town that also has the site sharing its name. A gateway to the underworld, the Zapotec high priests lived here. Because of the site's great significance to the area, the Spanish destroyed it as quickly as possible, demolishing the buildings and reallocating the building materials for churches, as well as inviting Spanish clergy to occupy the remaining rooms. They maintained, however, some of the

**"OAXACA'S STREET ART IS ONE OF THE
MAJOR ATTRACTIONS OF THE CITY"**



Mineral infinity
pool near
Herve el Agua



300 foot 'stalactite'
rock face at
Herve el Agua



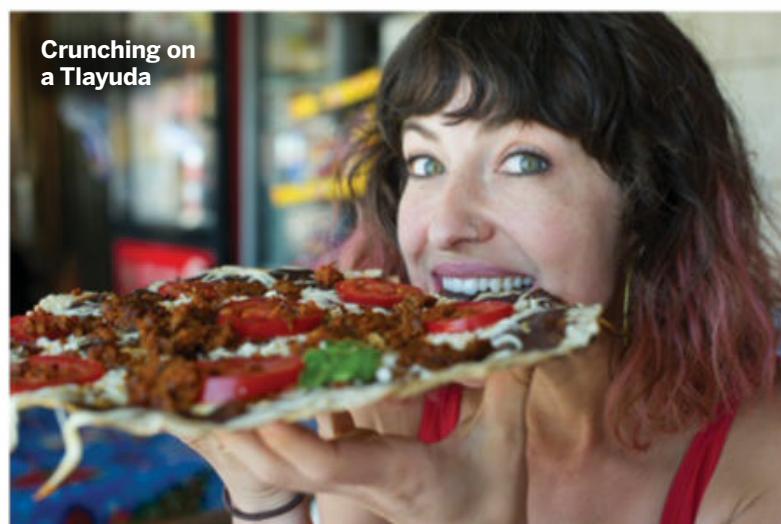
design elements in the new church to indicate to the Zapotec people that the Spanish church was the new rule of law.

Looking at the site you can see the strange mish-mash – half church, half Mesoamerican city – its details feel confused, blended. Mitla's columns are one of the most interesting architectural elements. They allowed for wider rooms, likely holding up timber beams covered by a stucco flat terrace roof. We're used to seeing narrower rooms with corbel vaulted ceilings in our Latin American travels, like the Mayan sites Tikal, Calakmul and Palenque. But perhaps Mitla's most unique design details are the "grecales" – precisely-cut stonework forming geometric patterns without the use of mortar.

Leaving Mitla, we continue east to one of Oaxaca's (and the Zapotec's) greatest natural treasures: Herve el Agua. With the sun beating down on the arid landscape, an oasis seems like just the answer. We traverse quite a bit of windy, dirt road but we don't mind a bit – we love it actually – the time flies as we discuss life, the universe and everything (forever inspired by the words of Douglas Adams), watching the Valleys spread out beneath us as we climb to the glorious destination.

Natural rock formations pour over the cliff like melting ice cream, flowing 200 feet down the sides of the mountain. But, don't be fooled. Despite the bubbling mineral spring pools on top of the precipice, but the seeming cascade of water is no such thing. For centuries, calcium carbonate from trapped rainwater has rushed up, creating pools on top of the plateau and running over the side depositing the solid mass that

Crunching on
a Tlayuda





"WE HIKE THROUGH THE LUSH MOUNTAINS PRACTICALLY ALONE"

resembles a waterfall.

Upon first glance, the pools appear to be hot, bubbling up incessantly, bluish green in colour. I learn that the hue of the water is due to its high mineral content, supposedly healing in nature. From the first set of pools, we can see the grandiose 'waterfall' so iconic to the destination.

Below the almost 300 foot 'stalactite' (if you will), we gaze back up at it. Close to the rising rock face, we feel sprinkles of water trickling down from the springs above. It's real wow moment. The trail was made 2500 years ago by the Zapotecs of the Oaxaca Valley, likely as part of a sacred site. A naturally-lined irrigation system (uncommon to pre-Hispanic Mexico) and terraces lead archeologists to believe this site held great importance to the Zapotecs. We can imagine why. With the midday sun on our backs, the dusty air drying our sweat immediately, we can understand why this oasis was revered.

Hiking back up, we take some time to soak up the minerals in an infinity pool. Gorgeous beyond belief, we take our time relaxing and swimming, breathing in the thin, dry air.

On the way out, small restaurants and shops offer tlayudas (one of my favourite Oaxacan dishes) and piñas locas (crazy pineapples loaded with booze). I indulge in both. Tlayudas are like giant crunchy quesadillas filled with quesillo (flavourful Oaxacan string cheese), lettuce, cilantro, onion, avocado and meat, if desired. The piña loca is a carved out pineapple filled with chilli powder, chamoy (a sweet chili sauce) and mescal. They are both phenomenal. With bellies full and limbs exhausted, it's time to retire to the Defender.

Speaking of our lovely lass, she's had some recent adventures of her own – a makeover of sorts – including a new set of wheels. Not everyone thought that putting RRC alloys on our Defender would look good, but Sean has loved these wheels since he was a boy in the 1980s. A fresh coat of paint, making them semi-gloss black, changed her whole look – we love it! We updated all of the lights on the vehicle too, finally switching to LED, so Sean doesn't have to squint at night any more (nor battle faulty connections and sockets). Our latest addition, which we're very excited about, are new billet aluminium hinges from Offroad Monkeys in Germany. There's no upside to door sag!

Back at our home base in the jungle, we wind through the thick greenery, between cane fields, playing in the puddles, watching frogs leap and lizards scurry. The air is thick and humid, it's so hot that we don't know if we're sweating or wet from the air itself. Water cascades from every nook of this



Upgraded LED lights - ideal for exploring wild places

WANT TO SEE MORE?

To follow Sean and Mittie's adventures, visit seanandmittie.com where you can also see their social media channels

primeval paradise and La Poderosa's new headlamps reflect beautifully off the watery rainforest floor.

This is the Papaloapan basin, where the foothills of the Sierra Madre de Oaxaca meet the coastal plain of Veracruz. Home to jaguar, fox and deer, exotic birds like toucans, macaws, and parrots, whose songs dance through the canopy. We learn about the rich cultural heritage from a wonderful woman, Dona Imelda, who welcomes us into her home, teaching us to make tamales and chocolate from scratch. In a time of fast food, the art of making this iconic food of the Pre-Columbia era is a treasure.

We drive toward Valle Nacional, a gorgeous town tucked away in abundant foliage, aware of its dark history. This city was the last in the Americas to have slaves (1920) and the memory lives here today. Nearby pineapple and rubber trees grow, waterfalls fill ponds and creeks with turquoise water for bathing, and we hike through the lush mountains practically alone – finding hidden caves and wellsprings along the way. Careful to avoid the oodles of poisonous snakes and spiders, we hike through the shady forests, somehow no cooler than under the glistening sun itself.

When altitudes change, so do we. Adaptable as humans have evolved to be, we flow with our environment, adjusting to meet the needs of our surroundings. We do the same in our journeys; shifting our expectations to meet the new terrain, open to the experience. A large part of adventure is this discovery.



CLUB OF THE MONTH

STORY AND PICTURES BY ANDY WILSON

Going out with a bang

The last Driving Day of the year for Dorset Land Rover Club opens its arms to new guests and brings a welcome surprise to a local charity



The club's driving days always attract a wide range of LR types

THE Dorset Land Rover Club held another very successful Driving Day at one of its regular sites just outside Crossways near Dorchester. Entry to the event wasn't just restricted to DLRC members, with the club opening it up to non-members as part of its policy to attract new members.

After a spell of particularly heavy rain there was plenty of mud at the site for those so inclined to go mud-plugging, whilst there were also plenty of woodland trails and more open non-damaging areas to keep the nearly 30 drivers who turned up on the day very much entertained.

Vehicles being driven ranged from a very original Series II, right through to an immaculate (although not for long) Range Rover P38A, with various Defenders and Discoverys making up the numbers. All the drivers who came along had a good time and lots of them commented on how hard the Dorset LRC members who prepared all the signage and direction boards had worked in order to make the site navigable and safe.



V8 Defender goes for a paddle



Club Chairman Jon Riddle, centre, presents a cheque to Laura Stanley and Sian Haynes from Mosaic

Each year the club picks a local charity to support and Mosaic was 2019's choice; it offers a pathway of support and guidance for bereaved children, young people and their families. After giving two representatives of Mosaic thrill-packed rides, Laura Stanley (a fundraiser) and Sian Haynes (a trainer) were presented with a cheque for a little over £1000 by the club chairman, Jon Riddle.

He said: "These driving days give you an idea of how much we enjoy being part of the club, and it's great to be able to support other people by doing what we enjoy."

Lara Stanley thanked all the club members who had helped to raise such a magnificent amount, and added: "This is a wonderful boost for our fundraising, and will help us to pay for a residential experience in Spring 2020."

Both Sian and Laura agreed that they'd had a great time being driven off-road, and would love to come again to one of the club's driving days. If you too would like to come to one of the many events hosted by the Dorset Land Rover Club then head to their website (see right).

Dorset Land Rover Club

The Dorset Land Rover Club came into being on August 23, 1987. Today the club has around 100 members who come mainly from the county. The club runs a varied programme of events and RTV trials, and all of them take place under the auspices of ALRC and MSUK. Several members go further afield to compete in national events. The club runs a number of green road trips including night laning, and it has a policy of promoting Responsible Rural Recreation. The club's Rights of Way Officer is also the Dorset GLASS representative, so he works closely with Dorset Council's Highways department, co-operating over information sharing and lane clearance projects.

Other activities include social gatherings, such as barbecues and treasure hunts and a monthly pub meet. In addition, the club has a regular presence at many of the shows that take place over the summer months around Dorset. It also chooses an annual club charity and money is raised in lots of different ways such as offering off-road experience rides. During 2019 the nominated club was Mosaic, a local Dorset charity that supports bereaved children and families. For further information and details on how to join the club check their website or Facebook page: dorsetrover.co.uk, facebook.com/DorsetRover



WHAT'S ON

February 8 - 9

■ **Great Western Classic Car Show**
Royal Bath and West Showground, Somerset
gwa.bristolclassicarshows.com

February 9

■ **Pennine Land Rover Club, RTV/CCV Trial**
Haggate, Burnley
penninelandrover.co.uk
 ■ **Scottish Land Rover Owners Club, RTV Trial**
TBC
slroc.co.uk
 ■ **UK Landrover Events, Lincoln & Belvoir 4x4 Tour**
Lincolnshire
uklandroverevents.com
 ■ **Essex Rochford and District 4x4, Pay & Play Day**
Canewdon, Essex
4x4er.co.uk

February 9 - 14

■ **The Snowball Rally, 4x4 Drive**
Scotland
prestige-promotions.co.uk

February 12

■ **UK Landrover Events, Yorkshire Dales 4x4 Tour**

Yorkshire

uklandroverevents.com

February 13 - 16

■ **London Classic Car Show ExCel, London**
londonclassicarshow.co.uk
 ■ **Australia - Victoria 4WD Show**
Lardner Park, Vic
vic4wdshow.com.au

February 15

■ **Solent & District Land Rover Club, Greenlanes**
TBC
sadlrc.co.uk

February 15 - 22

■ **Spain - ARDVentures Overland Adventure, Galicia in Winter**
Galicia, Spain
ardventures.co.uk

February 16

■ **All Wheel Drive Club, Trial Catlow Farm, Lancashire**
awdc.co.uk
 ■ **Breckland Land Rover Club, RTV/CCV Trial**
Dersingham, Norfolk
brecklandlrc.com
 ■ **Dorset Land Rover Club,**

RTV Trial

Mannington
dorsetrover.co.uk
 ■ **Scottish Land Rover Owners Club, Tyro Trial**
TBC
slroc.co.uk
 ■ **Woolbridge Motor Club, 4x4 & SUV Trial**
Dorset
woolbridge.co.uk
 ■ **Wye & Welsh Land Rover Club, RTV/CCV Trial**
Aberbeeg, Cardiff
wwlrc.co.uk

February 20 - 23

■ **The London Classic Car Show**
Olympia, London
thelondonclassicarshow.co.uk

February 21 - 23

■ **Race Retro, Historic Motorsport Show**
Stoneleigh, Coventry
raceretro.com

February 22

■ **UK Landrover Events, Durham Dales 4x4 Tour**
Durham
uklandroverevents.com

February 22 - 23

■ **Scottish Land Rover Club, CCV Trial & Green Road Run**
TBC
slroc.co.uk
 ■ **4x4 Adventures Ltd, Wales Greenlane Trip**
Llandrindod Wells, Mid Wales
4x4adventures.co.uk
 ■ **Vintage Sortout & Spares Day at Spring Tractor World**
Three Counties Showground, Malvern
4x4sparesday.co.uk

February 22 - 27

■ **Qatar - FIA World Cup Cross Country Rallies, Qatar Cross Country Rally**
fia.com

February 23

■ **4x4 Expo, 4x4 Off-road Show**
Stafford County Showground, Stafford
4x4expo.co.uk
 ■ **Anglian Rover Owners Club, RTV/CCV Trial**
Great Brickhill, Milton Keynes
arocoffroad.co.uk
 ■ **Cornwall and Devon LRC, RTV/Tyro Trial**
Tredinnick, Cornwall
cdlrc.com
 ■ **Essex Land Rover Club, Greenlaning**
TBC
elrc.info
 ■ **Four Wheel Drive Club of N. Ireland, Comp Safari**
Magheramourne, Larne
4wdni.co.uk
 ■ **Northern Ireland LRC, Forest Drive**
Tardree Forest,
landrover-club.com
 ■ **Southern Rover Owners Club, Timed Trial**
Elham, Kent
sroc.co.uk
 ■ **Torbay 4x4 Club, Trial**
Chudleigh, Devon
torbay4x4club.co.uk

February 28 - March 1

■ **USA - Four Wheel Drive Club San Diego, Tierra Del Sol, TDS Desert Safari**
California
tds4x4.com

February 29

■ **4x4 Adventures Ltd, David Bowyers Social Morning and 4x4 Driving**
Credition, Devon
4x4adventures.co.uk

February 29 - March 1

■ **Off Road Adventure Travel, Wild Wales 4x4 Explorer Tour**
Wales
offroadadventuretravel.com
 ■ **USA - Dayton Offroad Expo**
Wilmington, OH



February 22

Durham Dales

UK Landrover Events are running a Durham Dales 4x4 Tour on Saturday February 22. The route will take you from West Auckland through the Durham Dales to Corbridge and will cover trails in the Weardale area and tracks further north into Tynedale. The route includes forests, open moorland and old logging trails as well as steep rocky tracks, with amazing views across reservoirs and rolling hills. Details of this tour and others during 2020 can be found on their website:
uklandroverevents.com



March 6 - 8

Xtrem Challenge

The Welsh Xtrem 4x4 Challenge considered by many to be the ultimate challenge event in the UK takes place this year from Friday 6 to Sunday March 8 near Llanelli in Wales. It will follow its normal format as a three-day multi-discipline 4x4 challenge event created to test the driver and co-driver and their vehicle to the limit. As always the entry is full but spectators are welcome to come along. It's free to come to the venue and spectate, but you are asked to make a small donation as all profits go to charity. To date the Welsh Xtrem has raised in excess of £13,500. Full details, information on the teams competing and directions to the venue can be found on the event's website:

thewelshxtrem.co.uk



February 23

4x4 Expo

4x4 Expo returns to the Stafford County Showground on Sunday February 23. This is the biggest indoor 4x4 show in the UK with a host of trade and club stands set out in two halls with everything you need for your 4x4. In addition, 2020 will feature a third hall. Called the Off Road Motorsport Zone, it will incorporate the ORM Hall of Fame along with live stage interviews with drivers and personalities from the past, present and future, off-road motorsport vehicles and advice on how to get into the sport — be it as a competitor or marshal. Doors open at 9.30 am, admission is £8 in advance, or £10 on the day with free car parking. More details on the event's website: 4x4expo.co.uk



WHAT'S ON

daytonoffroadexpo.com

March 1

■ All Wheel Drive Club, Trial
Walters Arena, South Wales
awdc.co.uk

■ Cornwall and Devon LRC,
CCV Trial
TBC

cdlrc.com

■ Peak & Dukeries LRC,
RTV Trial

Bonsall, Matlock

panddlrc.co.uk

■ Solent & District Land Rover
Club, Greenlanes

TBC

sadlrc.co.uk

■ Piccadilly Wood 4x4, Pay &
Play Day

Bolney, West Sussex

piccadillywood4x4.co.uk

■ 4x4 Adventures Ltd, Drive
Round Day

Bampton, Devon

4x4adventures.co.uk

■ Normous Newark
Autojumble

Newark Showground

newarkautojumble.co.uk

March 1 - 10

■ Portugal — 4x4 Adventure
Tours, Portugal Tour

Braganca, Portugal

4x4adventuretours.co.uk

March 2 - 6

■ ARDVentures 4x4, Coast
to Coast

North Yorkshire

ardventures.co.uk

March 2 - 12

■ Morocco — 12th Edition
Trans' Land

Morocco

amada-aventure.com

March 5 - 20

■ Morocco — One Life
Adventure Travel, Western
Sahara Expedition

Morocco

onelifeadventure.co.uk

March 6 - 8

■ Welsh Xtrem,
Challenge Event

Lanelli, Wales

thewelshxtrem.co.uk

March 7

■ Four Wheel Drive Club of N.
Ireland, RTV Trial

Catcairn, Belfast

4wdni.co.uk

■ UK Landrover Events, Eden
District 4x4 Tour

Cumbria

uklandroverevents.com

March 7 - 8

■ North East Rover Owners
Club, CCV & RTV Trial

Penrith

nero.org.uk

■ Off Road Adventure Travel,
Wiltshire 4x4 Explorer Tour
Wiltshire

offroadadventuretravel.com

March 7 - 26

■ Morocco — Protrax
Overland Adventure, Desert
& Mountain Tour

Morocco

protraxoverlandadventures.co.uk

March 8

■ All Wheel Drive Club, Comp
Safari Round 1

Walters Arena, South Wales

awdc.co.uk

■ Northern Ireland LRC, Self
Assessment Event

Wightmans

landrover-club.com

■ Pennine Land Rover Club,
RTV/CCV trial

Catlow, Lancashire

penninelandrover.co.uk

■ Scottish Land Rover Owners
Club, Timed Trial

TBC

slroc.co.uk

■ Essex Rochford and District
4x4, Pay & Play Day

Canewdon, Essex

4x4er.co.uk

■ Parkwood Off Road Centre,
Pay & Play Day

Tong, Bradford

parkwood4x4.com

■ UK Landrover Events, Lake
District 4x4 Tour

Cumbria

uklandroverevents.com

March 9 - 13

■ Ardent Off Road, UK Coast
to Coast

UK

ardentoffroad.com

March 14

■ Peak & Dukeries LRC, RTV/
CCV/Tyro Trial

Norwood Lodge

panddlrc.co.uk

■ Solent & District Land Rover
Club, Greenlanes

TBC

sadlrc.co.uk

■ France - Battlefields by 4x4,
Calais Taster 4x4 Tour

Calais

battlefieldsby4x4.com

March 14 - 15

■ Essex Land Rover Club, RTV/
CCV Trial

Sudbury

elrc.info

■ Northern Ireland 4 Wheel
Drive Club, Comp Safari

Magheramourne, Larne

4wdni.co.uk

■ Southern Rover Owners
Club, Tyro & RTV Trial

TBC

sroc.co.uk

■ ARDVentures 4x4, Moors &
Dales Weekend

North Yorkshire

ardventures.co.uk

March 14 - 16

■ 4x4 Adventures Ltd, Drive
Round Weekend

Bampton, Devon

4x4adventures.co.uk

March 15

■ All Wheel Drive Club, Trial
Corwen

awdc.co.uk

■ Cornwall and Devon LRC,
Comp Safari

Redruth, Cornwall

cdlrc.com

■ North West 4x4 Club, Trial
Northern Ireland

facebook.com/northwest4x4

■ Scottish Land Rover Club,
Tyro/RTV Trial

TBC

slroc.co.uk

■ Woolbridge Motor Club, 4x4
& SUV Trial

Simons Quarry

woolbridge.co.uk

■ Wye & Welsh Land Rover
Club, RTV/CCV Trial

Taffs Wells, Cardiff

wwlrc.co.uk

■ 4x4 Adventures Ltd, Drive
Round Day

Bampton, Devon

4x4adventures.co.uk



March 14 - 15

Two-day Comp

The Northern Ireland 4 Wheel Drive Club is running a Comp Safari over the weekend of March 14 and 15 at the Magheramourne Quarry, Larne, and invites all clubs to join them. The venue is right beside the Larne Ferry Port so ideally located for anyone coming over to Northern Ireland to compete. It will run over 80-plus miles over the two days with an entry fee of £130. Camping is available on site. Details can be found on the club's website and Facebook pages:

4wdni.co.uk





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COME & GET DIRTY WITH ME

A black Land Rover Defender 4x4 vehicle is shown from a front-three-quarter view. The vehicle is positioned centrally behind the large, bold, orange text. It features a silver grille, round headlights, and a roof rack. The background is white, and the entire advertisement is framed by a thick orange border.

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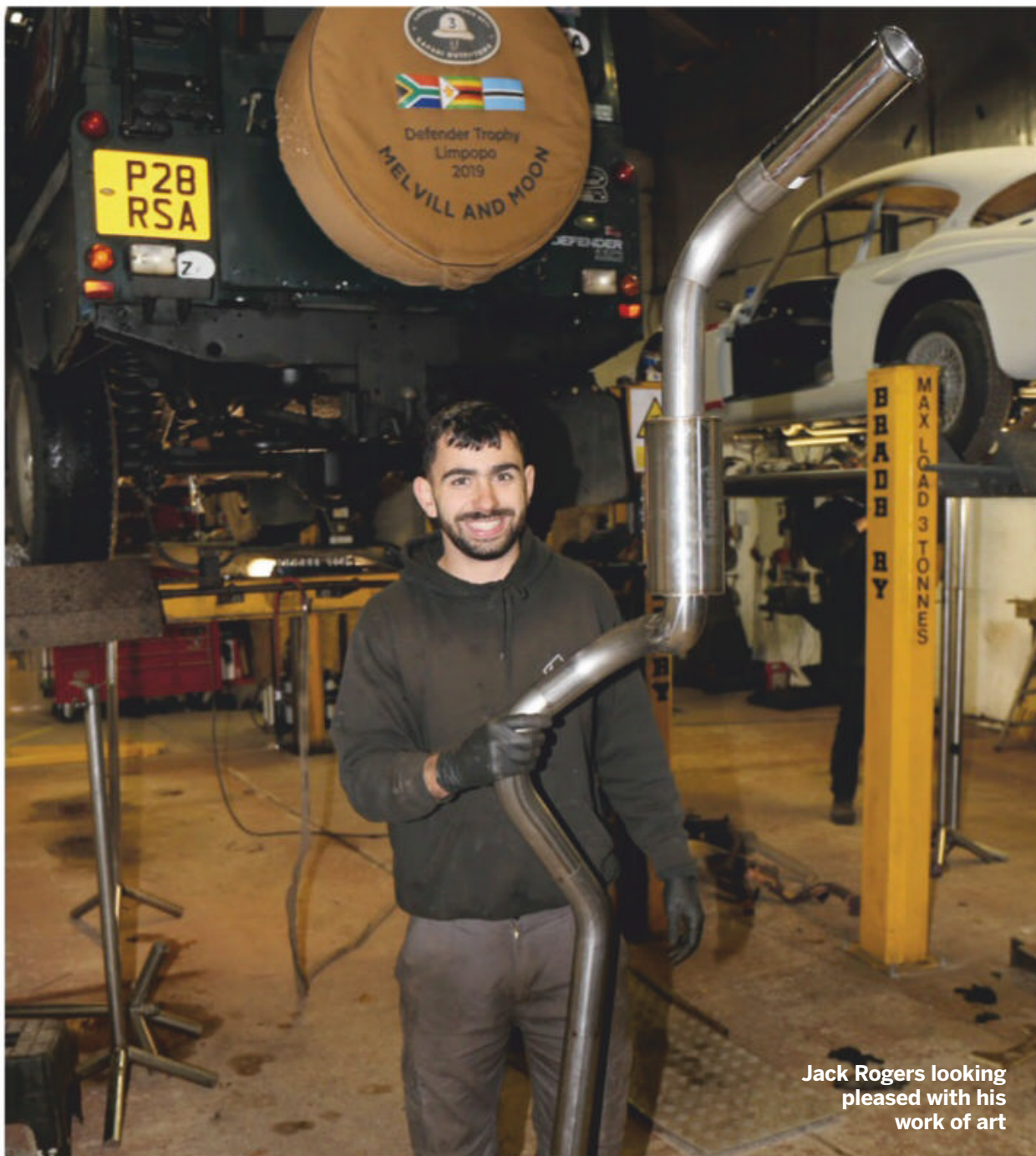
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WRITERS' ROVERS



Jack Rogers looking pleased with his work of art



Cutting the pipe to the correct length



Clean and then weld

Silencers of the Mamba

Patrick finally sorts his rusty pipe

YOU hear my Defender before you see it. At shows it turns heads. This is because it does not sound like a Tdi, Td5 or Puma Defender. It even sounds different to other BMW straight-six M52 engined Defenders. It has a wicked burble and pops when idling at the right revs. That is thanks to the Unichip and exhaust system installed by the previous owner.



PATRICK CRUYWAGEN
EDITOR

DEFENDER 110 2.8i

YEAR: 1999 MILEAGE: 257,000km
MPG: 20 POWER: 193bhp
TORQUE: 206lb ft

One of the guys in my village knows exactly when I am leaving town. Recently I noticed that the exhaust sound was a little louder than usual. Had the countless water crossings at the Billing off-road track taken their toll?

I start my inspection with the rear section of the exhaust system and when looking at the back box, I find the problem, a big hole in the back of it. I poke at it with the Leatherman and it starts to rain rust. The problem is simple. When doing deep water crossings, you know the ones we all love, then the water sits in there. Now most of us will think that the heat of the exhaust will just boil it all away. Not so fast my friends, the rear section is normally the coolest part of the whole system. So, it just sits there and eats away at the heavier mild steel from the inside. I quickly inspect the rest and it still looks like new. I can't believe that three years in the UK has done that to it!

There is one man who has done some

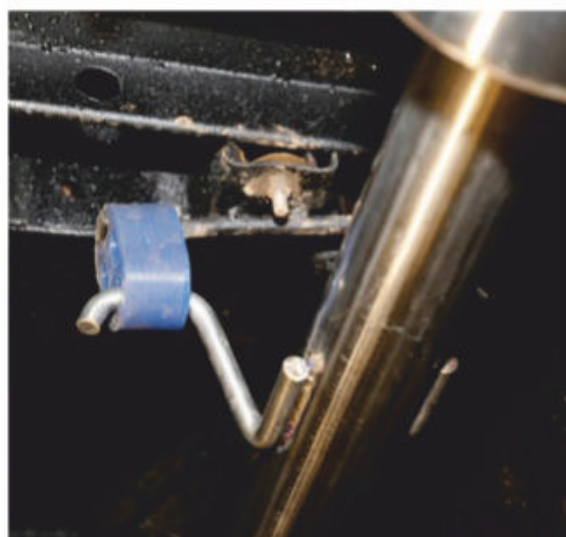
pretty radical exhaust systems for other 2.8i Defender owners in the UK. He is Dan the Man from Demand Engineering in Suffolk and so that is where I head. Dan is a bit of a TV 'exhaust celeb'. By that I mean he has created exhaust systems for some big-hitters on automotive programmes. Remember Guy Martin trying to break the world record for the fastest van around the Nürburgring? That was Dan's handiwork. He has also worked with Jimmy de Ville of Fifth Gear. I must stop now because Dan is blushing.

I ask him if he has any tips for LRM readers who are in the market for a new exhaust system? "Not all exhausts are made the same way or with the same quality materials. If you buy cheap then don't be surprised if it all falls apart after a year. Demand Engineering create bespoke stainless steel exhaust systems. We do problem solving and when a vehicle leaves our premises we are proud of what we have created for it."

We don't just write about Land Rovers: we live, breathe and spend all our wages on them...



Check that it fits before securing it



New mounts please



Pick your pipe

Dan hands me over to his able workshop manager Jack Rogers. After inspecting my 2.8i we both decide that we only need to replace everything behind the propshaft. No need to touch anything around the manifold area. So, I would be getting a new back box, one new silencer, the pipes that go in between them plus a back pipe.

Before he gets cracking Jack asks me what kind of sound do I want from what he is about to create? I describe what it used to sound like before the hole in the back box and tell him that I want something similar. Nothing too loud or over the top, as I drive it every day and I don't want the neighbours to complain.

After removing the old system Jack sets about building a new round silencer which I prefer to an oval one. He starts off with a perforated tube, the reason for all the holes is to muffle the sound of course. This is then covered in a glass fibre mat. It was all stuck into the outside tube. Finally, Jack tig welds the end plates into place. Voilà we have a silencer.

Using various stands, Jack positions the whole new system into place. It's a bit like playing Tetris except there is a big, freshly Dinitrolled chassis in the way plus some other bits. Eventually Jack has it all figured out and I get to choose a new tailpipe. They have quite a selection but I go for a conservative option that

will stick out just a little and to the side. Just enough to say look at me. The standard soft rubber mounts are then removed and replaced with harder injection moulded ones. Finally, it's all cleaned up to prevent contamination during the final welds. Jack then calls Dan over to give it all his nod of approval. Jack removes the stands, puts three new mounts in place and where they touch the exhaust, he welds it. Finally, he welds a Demand Engineering badge onto the tailpipe. Job done.

It was time to start up the Green Mamba and take her for a test drive. It was definitely quieter in the cab, but the beautiful burble and pop were still there. In fact, it sounds like a black maned Kalahari lion out on the pull. Jack had done an absolutely top job.

With our Land Rovers we often trawl websites to find the cheapest part. I get that. Sometimes though it is nice to get something custom made for your Land Rover. If it's a bespoke stainless steel exhaust system that you are after then why not try Demand Engineering?

DEMAND ENGINEERING

Need a bespoke exhaust system for your Land Rover? Contact Dan at Demand Engineering on 01473 890820 or see demandengineering.co.uk

LRM'S FLEET

Every month, LRM staff and contributors share their real-life experiences with the Land Rovers they own...



PATRICK CRUYWAGEN
EDITOR

1998 Defender 110 2.8



TREVOR CUTHBERT
CONTRIBUTOR

1984 Land Rover 90 Mazda 3.5 Tdi automatic soft top (rebuild project)
1990 Land Rover One Ten LHD V8 soft top
1994 Defender 130 Tipper 300Tdi
1998 Defender 90 Station Wagon 2.8i BMW six-cylinder petrol
2002 Discovery 2 Td5 Adventurer
2004 Defender 90 Td5 hard top



DAVE BARKER
CONTRIBUTOR

Discovery 4, Freelander 2 XS
Defender 90, Series I



ED EVANS

TECHNICAL EDITOR
1976 Series III 88 soft top
1989 Ninety Station Wagon
1998 Discovery 300Tdi
2000 Freelander 1 L-series
2000 Defender 110 Td5
2006 Range Rover Sport TDV6



The age of Disco

Dave looks back on 14 years of owning his 300Tdi Discovery

I take lots of photographs. I was about eight-years old when I got my first camera and my early pictures include the great liner Queen Mary, docked in Southampton. More than half a century has passed since then, in which I've clicked the shutter tens (if not hundreds) of thousands of times, especially since 2005, when I got my first digital camera.

Unfortunately, like many other photographers, I have never been very good at organising the pictures I take, but recently I decided to gather up all the forgotten images lurking on various computer drives and DVDs. It has been



hard work (and it's still ongoing) but it was also good fun. The recurring theme throughout was one very special vehicle: my 300Tdi Discovery.

I bought it just after I "went digital", in early 2006, and I've been

following its progress on camera ever since. It had just 60,000 miles on the clock when I became its proud owner, exactly 14 years ago. It was low mileage for a ten-year-old Discovery and that, along with a more or less complete service history, meant I held out great hopes for the 300Tdi engine. I like to think that early confidence on my part wasn't displaced, because since then I have put well over 100,000 more miles on the clock and it has never missed a beat, even though it is now 24-years old.

I passed my driving test in 1973 and have owned lots of vehicles ever since, including plenty of the non-Land Rover variety. Like most fans of the green oval, though, I eventually saw the light. Readers who have come to expect somewhat disparaging remarks from me regarding new Land Rovers may be surprised to learn that I loved the first-generation

Discovery from the start — and still do, because it is a workhorse, not a trick pony. Until I bought the Discovery, the longest I'd ever owned any motor vehicle was about five years. That means I've had my Disco for about three times longer than any previous car (but only twice as long as my 1984 Ninety, which I bought in 2013).

Looking back at the old images on these pages brought back great memories. But they also brought a tinge of regret on my part. Being reminded of how good my Disco looked in the early years of my ownership makes me regret removing the original bumpers, plastic trim and sills, especially now that the heavy-duty replacement bumpers are so rusty and ugly. They were powder-coated and, like most powder-coated steel accessories, look great new but bloody terrible once that plastic peels off... In my case about six months later.

Oh yes and I also regret fitting a winch on the front. It seemed like a good idea at the time, but it just doesn't look right on a Disco, in my opinion. Hindsight is a great thing, but I expect all those owners who turned 80 inch Series Is into V8 triallers now feel the same way — as do those who converted three-door Range Rovers into bobtailed off-roaders. Still, we all learn by our mistakes.



DISCOVERY 1 300Tdi

YEAR: 1996 MILEAGE: 170,000
MPG: 25 POWER: 111 bhp
TORQUE 195 lb-ft



Greenlaning in the Welland valley, 2011



Crash, 2010



Herbie, the (first) Wonderdog



Northumberland beach

I haven't included any recent images of my Discovery here — partly because regular readers will know exactly what it looks like, but mainly because it looked so much better before I modified it. I've also avoided all the old pictures of rusted steel panels being cut out and new metal being welded in. It succumbed early to the notorious Disco rot (the first MoT failure for corrosion was about 2009, I recall). Since then, there have been plenty of repairs, but a few hundred quid here and there have kept my pride and joy running long after most of its peers have become organ donors for Tdi engine conversions. Regular Waxoyl applications have helped too, of course.

Mishaps over the years have included an argument with a lorry that took out a front wing, as well as another collision that was entirely my own fault: I stupidly forgot to apply the handbrake when parked on a slope and the Disco took a driverless ride of 50 yards or so before slamming into a brick wall. The dent in the front of the bonnet is still there. Luckily it didn't do more damage.

More often than not, my passengers have been my dogs — either my much-missed Herbie, or his successor, Billy the Wonderdog. Like them, I love the old Disco, which is comfortable enough without getting too complicated. The perfect Land Rover, in fact.

I hope you enjoy the pictures... and join me in toasting (hopefully) another 14 years.



Yesterday...

I have a love-hate relationship with Land Rovers and celebrities. I hate the blinged-up Range Rover monstrosities favoured by today's deplorable B-listers, but I love proper Land Rovers owned and driven by proper legends like Paul McCartney.

When the Beatles split up in 1970, Macca and his wife, Linda, went all self-sufficient in Scotland — namely the Mull of Kintyre, where he had purchased a farm back in 1966. The place inspired the hit single of the same name, which topped the charts in 1977 and remains one of the best-selling records of all time.

But it was a bit remote, which presumably is why McCartney bought the leaf-sprung Land Rover in the photo, which son James is leaping from as Paul balances precariously on a fence and daughter Stella ignores the pair of them.

The image was taken in 1982 by renowned photographer Linda, who sadly passed away in 1998. It is part of a retrospective exhibition of her work, at the Walker Art Gallery, Liverpool (April 25 to Aug 31).

LRM'S FLEET

Every month, LRM staff and contributors share their real-life experiences with the Land Rovers they own...



DAVE PHILLIPS

CONTRIBUTOR

1996 Discovery 300Tdi
1984 Ninety 300Tdi



MARK WILLIAMS

CONTRIBUTOR

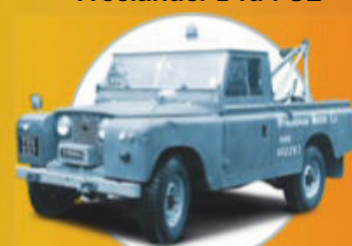
2005 Freelander 1
TD4 HSE Station Wagon



STEVE MILLER

CONTRIBUTOR

2007 Discovery 3, 2004 facelift
Freelander 1 Td4 SE



TIM HAMMOND

CONTRIBUTOR

1991 Range Rover Classic 300Tdi
1987 Range Rover Classic 3.5 EFI V8
1986 Range Rover Classic 300Tdi
1984 Range Rover Classic 3.5 V8
1984 Range Rover Classic 3.5 V8
1982 Range Rover Classic 3.5 V8
1982 Range Rover Classic 3.5 V8
1989 Land Rover Discovery 200Tdi



ALISDAIR CUSICK

CONTRIBUTOR

1995 Range Rover Classic
1957 Series I

At home, lost in the landscape



Shunpikin' in a Series I

Want to get the best from driving your Land Rover? You need to go shunpiking, according to Alisdair



ALISDAIR CUSICK
CONTRIBUTOR

LAND ROVER SERIES I

YEAR: 1957 MILEAGE: 26,600
MPG: 19 POWER: 52bhp
TORQUE: 101lb-ft

RANGE ROVER CLASSIC

YEAR: 1995 MILEAGE: 95,000
MPG: 22 POWER: 180bhp
TORQUE: 232lb-ft

FOR those fortunate (or unfortunate?) enough not to have to use our Land Rovers every day, this is a quiet time of year. We anticipate the last winter road salt, and pass the time instead planning some trips. In 2020 I already know what I'm doing. I'm going shunpiking.

Today, there's only really one primary toll road in the UK; the M6 toll which bypasses the M6 motorway around Birmingham. But that wasn't always the case. In the 1500s, Parliament first passed law that made local parishes responsible for the upkeep of roads. By 1654, road rates were brought in, backed up with paid labour for road repair, and 1663 saw the first introduction of a turnpike road, meaning users paid a toll to use part of the Great North Road in Hertfordshire, Bedfordshire and Huntingdonshire. On paying the fee, the pike – a staff blocking the route – would be turned, allowing access, and hence the name Turnpike.

By the mid 1800s, a fifth of UK roads were turnpike controlled. Many journeys meant passing through a number of different turnpikes to reach your destination. To avoid mounting costs, travellers began to avoid the pikes where possible – shunning them – giving rise to the name 'Shunpiker'. That is someone who consciously seeks to avoid tolls, by taking the back roads, which, I realised is exactly what I've been doing for years in my cars. Only I'm not avoiding tolls, I'm avoiding traffic. I can't recommend it highly enough.

I realised I was consciously doing it as I've used my Series I more over increasingly longer distances. In modern traffic, those can't-wait always-in-a-rush drivers take the edge off pedalling the 62-year-old Land Rover. Like a biker, I feel I'm wasting too much energy on keeping track of others. I quickly realised that the Series I is better away from that, so instead turned to the back roads. There, everything slots together. The roads are quieter, the scenery better and the



Range Rover shunpiking in Scotland and Ali's old 911, in driving heaven

journey as good as it can possibly be.

I can easily reach the Peak District shunpiking on back roads, avoiding all but one short section of dual carriageway. Once up there, the Series I is right at home and ticks around the lanes like a clockwork mouse. With little other than an OS map and time I can weave my way about, enjoying my on-form Land Rover to the full.

But then I thought back on how I've used my Range Rover. When we went on holiday to Scotland in it in 2013, once up there we shunpiked it without a doubt, dropping off the main roads to Glenelg and it's turntable ferry, bypassing the modern bridge to Skye

Thinking further back, I even did it when I had my Porsche 911. I can vividly remember one day in Wales, meeting up with some fellow journalists for a driving

day in our own cars. Tiring of them being less than respectful of speed, I became bored, quit that, and cut across country for home. Rather than spank maniacally to the next apex, I mooched through forests on gated roads, around reservoirs and over a lovely pass back into England. Shunpiking was much more fun than screaming tyres.

I've had the 88in roadworthy for two years now. The act of keeping it in the best fettle I can is a huge part of owning the car. We all know Land Rovers will still work when subjected to all manner of mechanical neglect, but where's the fun in having a car like that? If I'm going to own one, I want it to work, and work well. Breakdowns are a game of chance, but I'd rather stack the odds in my favour, thank you. Though I've changed the engine oil and filter each year, it was time for its first

full service since being roadworthy. Coolant (ethene glycol), engine (20w50) and transmission oils (Ep80/90 GL-4) were all drained and replenished, two years to the day it went back on the road.

With dry roads, and unusually mild weather, I went out in it. Driving around the lanes in it after a couple of months break, on fresh fluids, I'd forgotten just how nicely it drives. It really felt like the 26k mile car it is. I even went shopping in it,



Series I, shopping. Yes, people did stare

smiling as I stepped from inlet-over-exhaust to touchscreen technology in two paces.

With the car running on form, I'm back to the seasonal waiting game. Each morning I open the curtains hoping for dry roads, wondering; is it a driving day today? I'm passing evenings on the OS maps, honing a Peak District route. Wetton tunnels, Tissington, Conkesbury and Longstone Edge here I come. No main roads, of course, I'll be shunpiking all the way.



First full service, replacing all oils and coolant



Dave updates his lights but gets paranoid about new tech

IS it new technology that's worrying me or am I just becoming paranoid. Well, I think yes maybe, I'm getting paranoid of late especially about two things, daylight running lights (DRL) and engine oil level.

DRL seem to be fitted to most cars now; if they weren't fitted as standard then they have been retro-fitted. I'd say that the percentage of vehicles on the roads with DLR is about 70 per cent now. Originally, I think the idea behind them was to reduce pedestrian deaths by making cars more visible, but now the danger is if your car doesn't have DRL on there is a high chance you aren't going to be seen in a line of oncoming traffic not only by pedestrians but other road users.

With that in mind, I decided I would feel happier if I also had DRLs fitted.

On a Discovery 4 one option would be to fit a set of original D4 headlights with the DRL in, from a later model, but they are expensive and to be honest I don't like the ring of fairy lights on later D4s.

There is a genuine Land Rover kit available, but it's expensive and difficult to fit, so I decided to opt for aftermarket ones. The ones I decided on are a combination DRL and fog lamps from Powerful UK. These are a straight replacement for the original standard fog lamps on a D4 under the bumper. They have two functions, with the outer LEDs as the DRL and the centre LEDs for the fog lamps, and it uses the original D4 H11 wiring plug. For the DRL you need to wire to a live feed and also to a side light

to turn the DRL off when the D4's side lights get turned on, which I believe is an MoT requirement.

One advantage with this make of DRL is it has a built-in relay to turn the DRL off and you don't need a separate switch. All you need to do is wire a live ignition feed to the DRL, which on a D4 isn't as straight forward as it sounds if you want one that goes off as soon as the ignition is turned off, as most of the ignition live feeds seem to have a few minutes' delay on them. After some checking with a test lamp, a suitable live ignition on and off feed was found and the lamps were wired in.

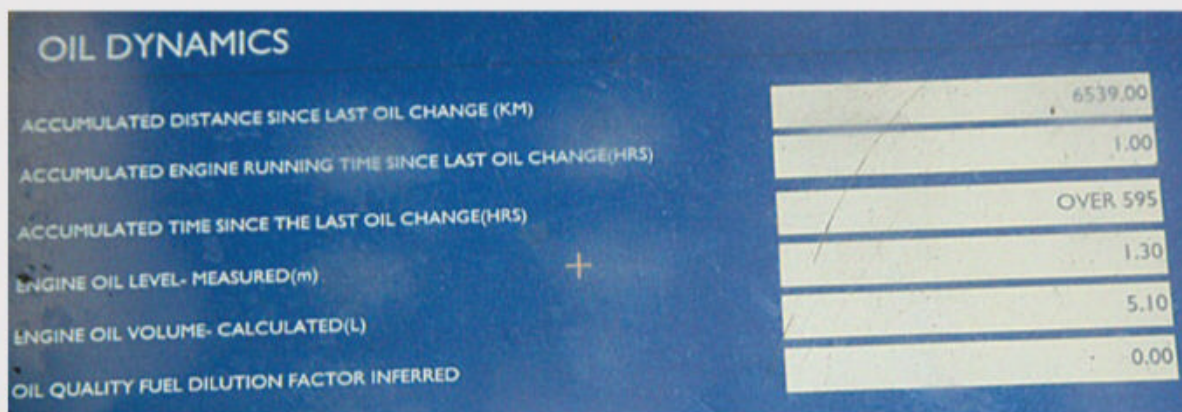
The switch feed from the side light was easily done, with a wire coming straight off the main headlamp multiplug. As for them being a straight replacement for the D4 original fog lamps, well they almost are, in



DRL lights fitted and, inset, the Powerful UK unit

that they fit in the same hole and use the same screw fittings. But they are a little shorter and so sit further back in the bumper than the original fog lamps. This is easily cured by fitting some form of spacer to bring the new lamp forward a few millimetres. I used some plastic tubing I had laying around. I

I'm more than happy with the results: nice and bright in daylight and low enough not to dazzle other road users but can still be seen. I have to say I feel more visible now in a long line of modern cars all with their various shapes and patterns of bright DLR on, too.



Oil check

I know I've gone on about checking the oil level on a D4 before but it is still bothering me, all down to the lack of a dipstick to check it with. I know it's an age thing and anyone under 25 will say it's the future and new cars have all-singing and dancing electronics. I bet the new Defender won't have a dipstick either and in the future cars won't even have a dashboard display screen; it will all be Bluetoothed to your smart phone. Progress, they will say.

Anyway, since the last service when the correct amount of oil was put in, the electronic oil level gauge has shown my oil level one line under the maximum line. Well now it's dropped to two lines below so I feel it's not full and I should be topping it up. The handbook says if it's showing between the

Max and Min level and 'Level OK' then it's okay and no need to add any oil. If oil is needed then the electronic display will tell me how much I need to add, which means you have to trust the electronic gauge.

I'm told there is another way to check the oil level that might just cure my paranoia. You can plug the Discovery into a diagnostic machine and it will tell you the exact amount of oil in litres rather than just on a scale. So with the level reading two under the max line it was plugged in. The reading said it was 5.1 litres so just a little under the 5.7 litre capacity. Rightly or wrongly I topped it up with under half-litre and I have to say I feel happier as the electronic gauge now reads full.

I will try not be so paranoid again and let modern technology tell me next time.



DAVE BARKER
CONTRIBUTOR

DISCOVERY 4

YEAR: 2010 MILEAGE: 42,500
ENGINE: TDV6 POWER: 242bhp
TORQUE: 443lb-ft MPG: 34.2mpg



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Next Generation Diagnostics Tool

Ideal for the workshop & home user

What is Lynx Evo?

Lynx Evo is the next generation diagnostic tool for Land Rover vehicles. Offering market leading diagnostics from a powerful and mobile design. Lynx Evo provides full vehicle servicing and in depth diagnostic capability for all Land Rover models from 1990 through to current day. Ideal for the workshop and home user.

Live data can also be displayed using numerics and graphics making it easier to read time based events on your Land Rover. This small but powerful dongle requires no batteries as it uses the vehicles power. For the enthusiast home user, using Lynx Evo will mean no more trips to your local main dealer to clear any faults on your Land Rover.

Lynx Evo is compatible with iOS and Android mobile devices with apps available for download from the Apple App Store and Android Play Store. As the software is App Store based and is loaded onto your mobile device, updates are as easy to do as any other mobile app, simply click the update icon. Lynx Evo is manufactured by the company who supply Land Rover with their T4H Legacy diagnostic product.

What does Lynx Evo do?

- > Read fault codes
- > Clear fault codes
- > Read & display live data
- > Test actuators
- > Special functions - see coverage chart
- > Programming - such as alarm settings, key fob etc. on selected models
- > Service reset

What do you get with Lynx Evo?

- > Lynx Evo dongle
- > Quick start guide
- > Protective carry case

What Land Rover models does Lynx Evo cover?

It is important to note that if you purchase an unlock code for a Discovery this code will cover all the Discovery family - from Discovery 1 through to Discovery 4. This feature is hugely beneficial if, at a later date, you upgrade your vehicle within the same Land Rover family you don't have to purchase another unlock code.

What do I need?*

DA1500

Lynx Evo - single Land Rover family (see 'What models does Lynx cover' - left) Land Rover family home user version. Unlocked for one Land Rover family only.**

Defender Family

- > Defender - from 1990

Discovery Family

- > Discovery 1
- > Discovery 2
- > Discovery 3
- > Discovery 4

Freelander Family

- > Freelander 1
- > Freelander 2

Discovery Sport Family

- > Discovery Sport

Range Rover Family

- > Range Rover Classic
- > Range Rover P38
- > Range Rover L322
- > Range Rover L405

Range Rover Evoque Family

- > Range Rover Evoque

Range Rover Sport Family

- > Range Rover Sport - Mk1
- > Range Rover Sport - Mk2

Supported Languages

- > English
- > French
- > Spanish
- > German
- > Italian
- > Dutch
- > Portuguese

**Upgradable to allow extra Land Rover families to be added at a later date. Important - After 12 months there will be a charge for upgrades, existing functionality will not be affected if you don't upgrade your Lynx Evo.

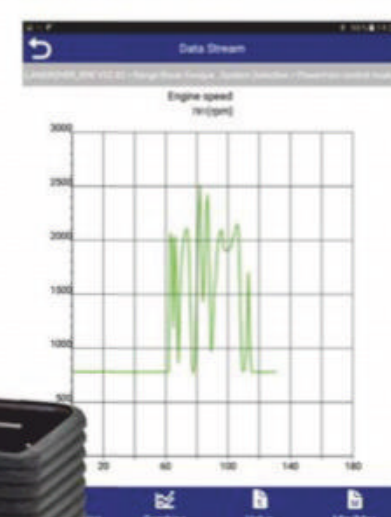
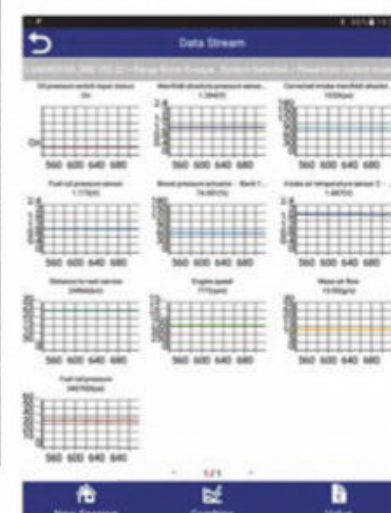
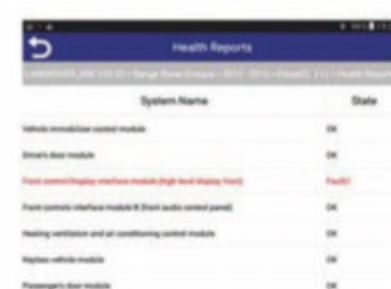


Key Features

- > Read & display live data
- > Mobile device based
- > Easy to use
- > Unlocked ready to cover an entire Land Rover model family
- > Upgrade software over app store
- > Quickly checks your Land Rover for faults
- > Small enough to store in glove box



Example screen shots showing some of the different Lynx Evo display modes.



Upgrade software over app store

*Important - Not for sale or use in Australia, New Zealand or USA. Please check that the Lynx Evo App is available in your country before ordering.

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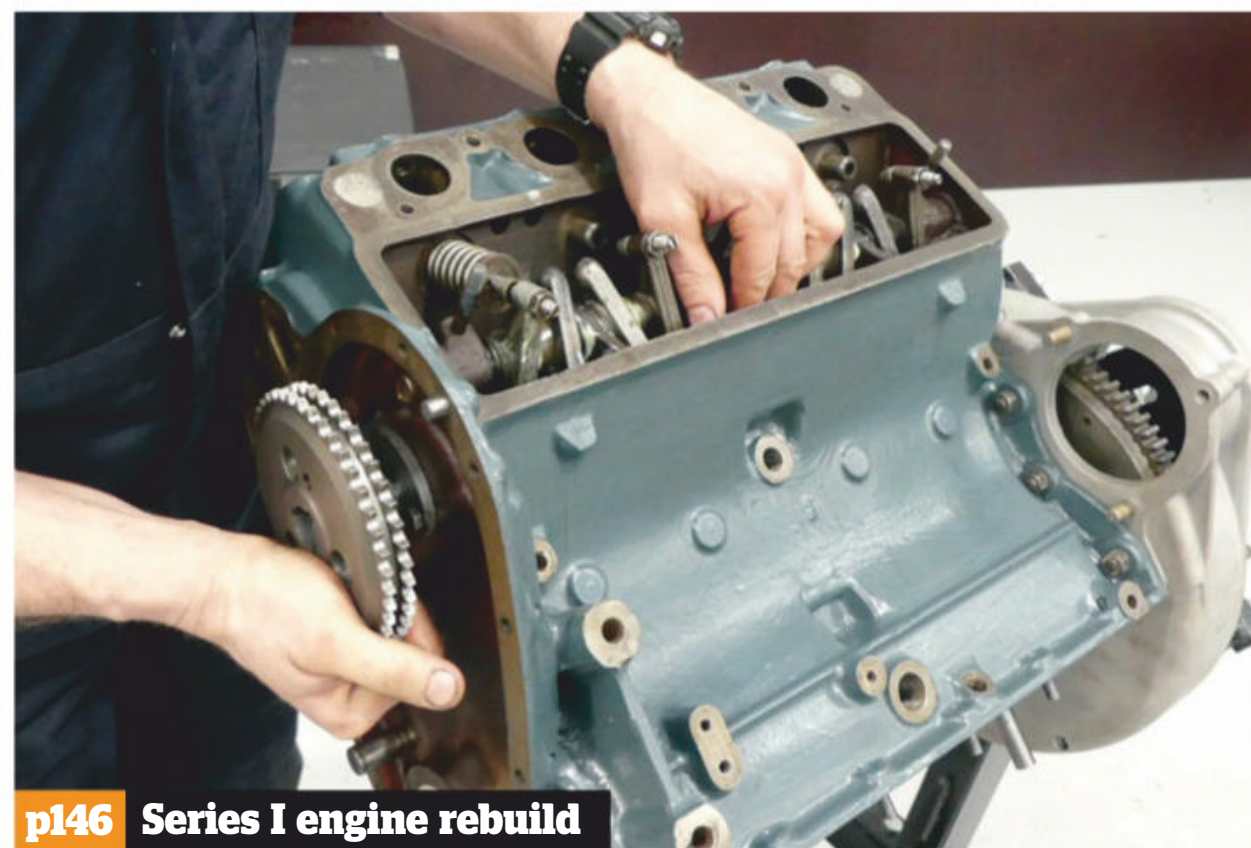
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How to...

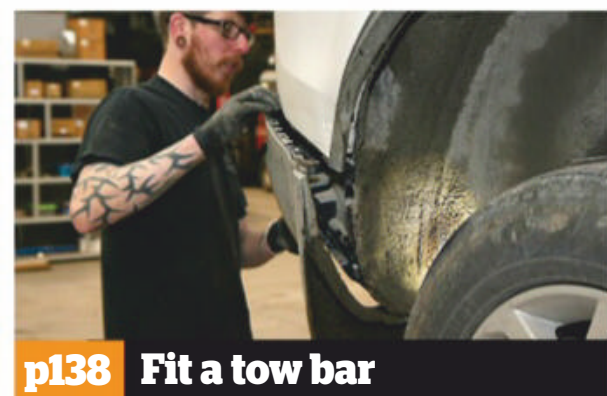
Projects, repairs, modifications and advice guide



p146 Series I engine rebuild



p134 Refurb a horn



p138 Fit a tow bar

Contents

- 128 Cylinder head removal**
Get your car back into full service
- 134 Windtone horn refurb**
Ensure yours plays the right tune
- 138 Tow bar fitment**
How to fit a tow hitch to a D5
- 142 Product test**
Which metal folders are the best?
- 146 Series I rebuild**
In part 7 Ed ensures the crank and cam work harmoniously

WORK SAFELY

- Wear thick protective gloves when working with sharp edges, grinding, cutting and using an angle grinder
- Hold the angle grinder with two hands to control torque twist and kick-back
- Wear eye protection when grinding, cutting, wire brushing, sanding, releasing springs and clips, when opening fluid lines and working on overhead parts
- Wear a particle filter when removing rust and cleaning brake parts

- Wear steel toe-capped work shoes that will protect against falling objects and ensure better grip on slippery floors
- When welding, wear specialist welding protective gloves, clothing and mask, and ensure appropriate fire-fighting equipment is available close by
- Never work on a cooling system, nor remove the filler cap, until the engine and coolant are fully cooled; and then always remove the filler cap slowly in case of residual pressure

Tips for safe wading

FLOODED roads are now a regular occurrence in the UK, and we're fortunate to be able to wade the floods confidently in our Land Rovers. But there are limits, cautions and techniques if we want to reach dry land.

We need to drive slowly enough to assess the increasing depth as we wade in. By the time the water gets too deep, reversing out risks water flowing into the exhaust pipe. And stopping, even to engage reverse, is a bad idea because it risks an engine stall. A smooth steady motion in low gear is best.

Sticking to the vehicle's maximum wading depth helps avoid the engine fan dipping into the water and spraying it into the engine compartment. This is more of a concern on petrol ignition systems, but even diesel engines have vulnerable electrical connectors for heater plugs, stop solenoids and sensors, which need to stay dry. Moving through the water with a small bow wave will produce a depression in the water level behind the front panel, reducing the risk of the fan blades dipping in.

It's worth checking transmission and axle breather pipes at service times. If detached, they can let water in directly. If they are blocked, water may be sucked in past worn seals when the sudden immersion in cold water cools the hot casings, causing a partial vacuum inside.

After negotiating the flood, drive with extra care until the brake friction surfaces have dried, helped by gentle pedal application until the normal bite returns. If moisture has entered electrical connectors, it's likely to stay there causing corrosion and ultimately circuit interruptions, but a brisk drive in dry conditions helps blow them out.

Raised air intakes are needed for the deepest floods, but they rely on every pipework connection between the intake and the engine being fully watertight, generally requiring sealant. If water reaches leaky air inlet connections, or reaches a standard air inlet, there is a risk of terminal engine damage. It's not just the wetness that's a problem: water is almost incompressible, so if it's sucked into the engine it will simply halt the pistons, resulting in bent conrods and other damage.

And always carry a tow rope to drag lesser 4x4s onto dry land. Four-wheel drive doesn't help, it's proper waterproofing that matters.

Ed Evans, Technical Editor

NEW SERIES: **Td5 OVERHEAT, PART ONE**



CONTRIBUTOR
TREVOR
CUTHBERT

NEED TO KNOW

COST: £11.20

TIME: 7 hours

DIFFICULTY: 🐣🐣🐣🐣🐣

MODELS: Defender 90, 110, 130, Discovery 2

TOOLS: General workshop tools, breaker bar, timing pin set

PARTS & COSTS:

Timing pin set, Laser Tools, £11.20

All supplied by BLRC Ltd

WORK SAFELY:

- Wear protective gloves
- Wear safety boots
- Ensure correct lifting techniques are employed in restricted engine bay

CONTACT:

BLRC Ltd

Tel: 02897 511763, blrcvehiclespecialist.co.uk

Removing the cylinder head

After a quarter of a million miles, this Td5's cooling system was pressurising, and the engine overheating. Trevor Cuthbert describes how to remove the cylinder head to investigate

THE Td5 engine fitted to Discovery 2 models up to 2004, and to Defender models up to 2007, was the last engine designed and built by Land Rover prior to later developments by Jaguar Land Rover such as the Ingenium engine family.

The Td5 engine has shown itself to be a long-lived and reliable unit. With its mechanical strength and electronic control systems it has proved to be highly tunable in comparison to the earlier Land Rover engines. Despite early concerns about the electronic engine management systems, which were considered to be less reliable and more difficult to repair in the field than the mechanical injection systems of earlier engines, the Td5 electronics have proved to be highly reliable.

It is true that issues do arise with the Td5 engine (as is the case for pretty much every motor vehicle manufacturer) and early Td5

engines suffered a couple of isolated mechanical failures. One was the sudden and complete failure of the oil pump drive, the other being cylinder head 'shuffle' caused by weak retaining studs (manufactured from nylon, rather than steel). These faults were fixed within two years of the introduction of the Td5, and the engine is now considered to be highly dependable.

Any internal combustion engine that has covered high mileage can also throw up problems such as a failed head gasket or perhaps cracks in hard-worked cylinder heads, and the engine in this Td5 Discovery had begun to overheat and pressurise the cooling system. The Discovery had offered trouble-free motoring up to this point – a mileage of over 240,000 miles – and we decided to take the cylinder head off to investigate what has gone wrong. It was time to fix the problem and get the Discovery back into full service

Disconnecting the ancillaries

CARRYING out major work to a Land Rover engine requires an organised and methodical approach. Some of the tasks must be carried out in a specific order and it is important to make notes along the way or take photographs to remember what you did and when you did it – enabling everything to be put back together again correctly.

The cylinder head on a Td5 engine has quite a number of systems attached to it, in addition to the expected air intake and exhaust manifolds. For example, a fuel cooling unit is present (on the right side at the intake manifold) which has coolant feed and return hoses that need to be disconnected. However, dealing with each of these components systematically and in order is not difficult, albeit some areas are quite restricted.

Another important consideration is cleanliness, particularly at the point when the cylinder head cam cover has been removed, care being needed to prevent dirt or debris falling in to the engine, and to avoid dropping any small nuts or other parts in there.

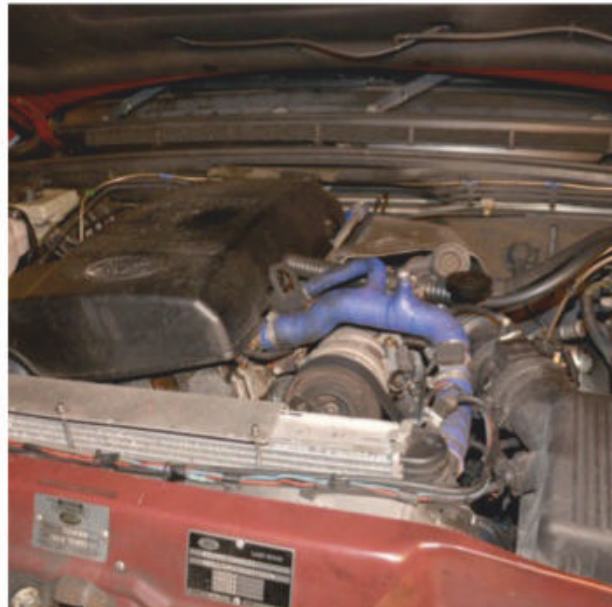
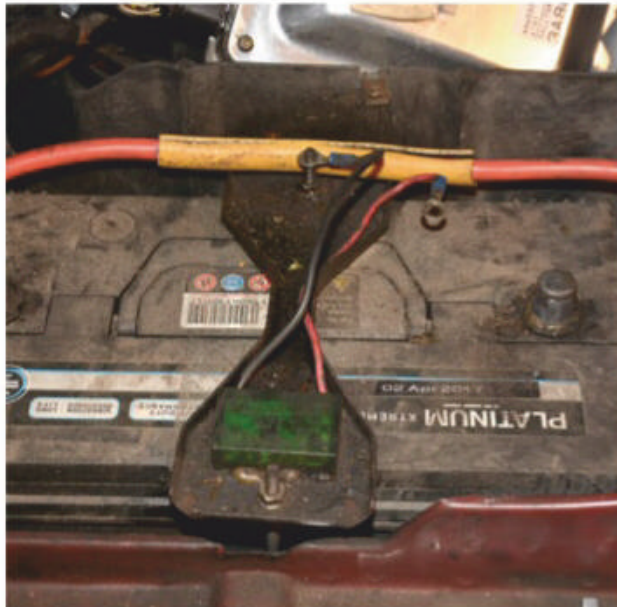


Serious issues

1 This Td5 engine has been pressurising the cylinder head and overheating, evident by the coolant being forced out of the filler cap.

Bulging

2 The coolant hoses have been under excessive pressure too, with signs of coolant weeping through some of the joints at the hose clips, such is the pressure.



Safety first

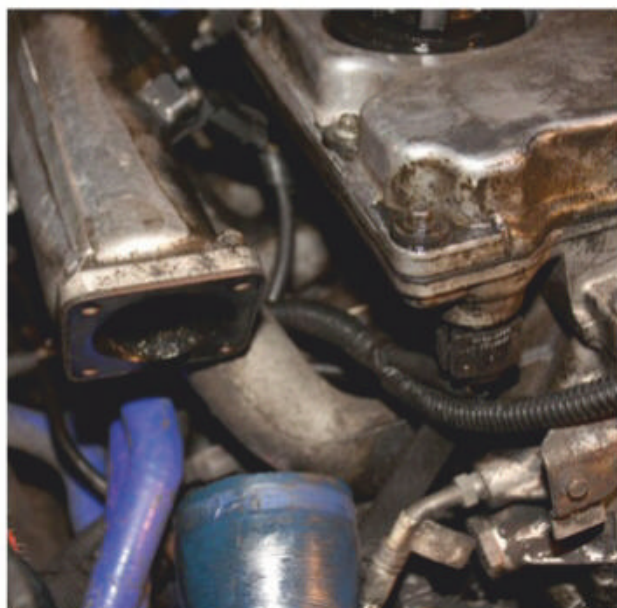
3 As with any work on a motor vehicle, the battery is disconnected before any operations to remove the cylinder head commence (earth lead first).

All need to be removed

4 The cylinder head is surrounded by numerous components, such as the acoustic cover, turbocharger, coolant hoses, fuel lines and air intake.

Eye on the prize

5 With the acoustic cover removed (three bolts) the cylinder head can be seen properly, with cam/rocker cover and the other parts to be disconnected or removed.



Right side manifold

6 The EGR valve, or in this case the EGR bypass pipe, is disconnected from the intercooler hose and the air intake manifold, by removing the four M6 bolts.

Coolant pipe

7 Here the front coolant hose to the fuel cooler unit has been disconnected by first loosening the hose clamp and then pulling the bung out.

Finger of a glove

8 At the rear right corner of the engine, the fuel pipes are disconnected from the fuel pressure regulator and protected from dirt or grime entering.



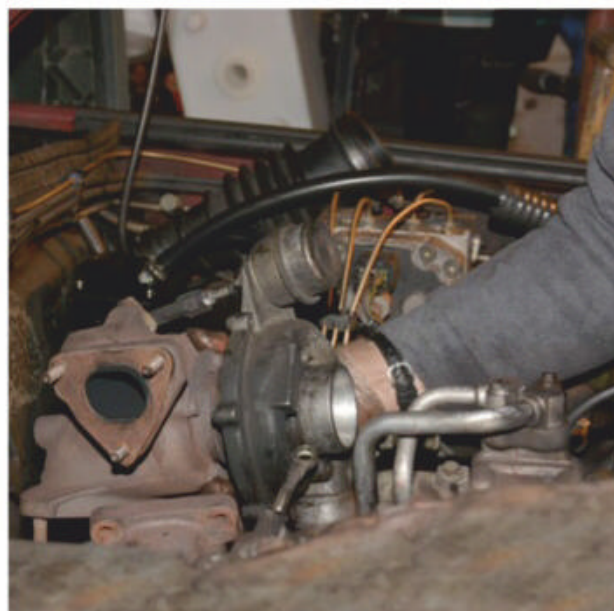
A tight spot

9 The rearmost fuel cooler water hose is also disconnected by loosening the hose clip and pulling it out free of the unit, and tucking it out of the way.



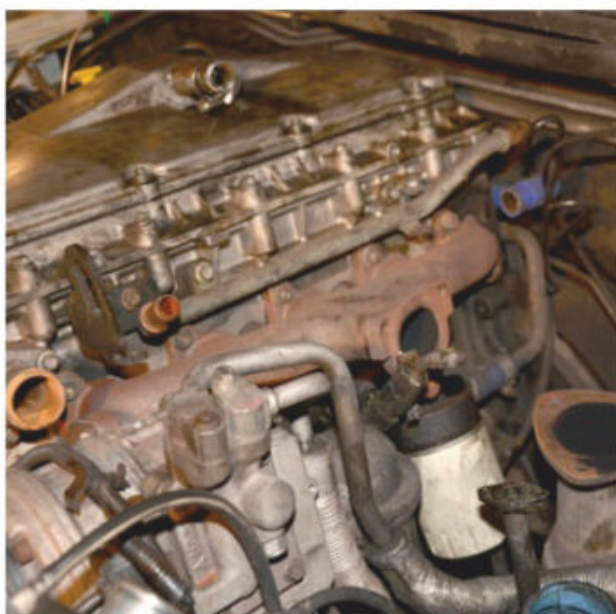
Open aperture

10 This rubber blank is levered out of the front of the cylinder head assembly to access the cam shaft sprocket, as the bolts need to be removed.



Clear the nearside

11 At the left side of the engine, the turbocharger needs to be removed by disconnecting the exhaust down pipe, the oil hoses and the studs to the exhaust manifold.



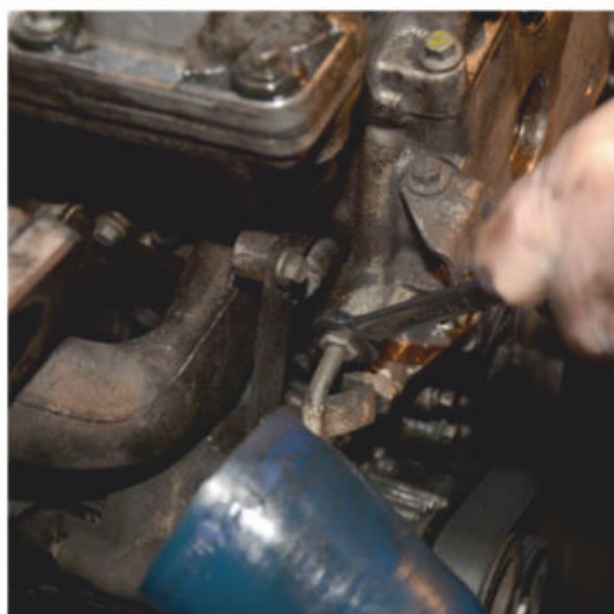
Get a grip

12 We decided to leave the exhaust manifold in place for now, as it will act as a handle to aid lifting the cylinder head off the engine.



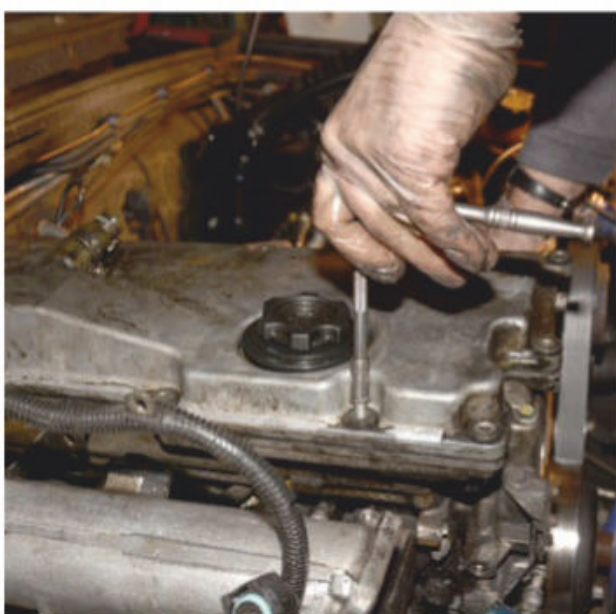
Fish it out

13 The engine wiring harness that runs from right to left of the block needs to be eased fully clear of the cylinder head, including unplugging the glow plug leads.



Lubricant supply

14 The oil pipe from the cylinder head to the vacuum pump is disconnected using a 13 mm open-ended spanner, and tucked clear of the head.



Take off the lid

15 Thirteen M6 bolts are removed with an 8 mm socket wrench in order to release the cylinder head cam/rocker cover, having first removed the breather hose.



Up and forward

16 The cam/rocker cover is lifted clear of the engine, taking care that the internal baffle does not foul the components below as it is withdrawn.



More to do

17 With the cover removed, a few further vital operations will take place at the head before the cylinder head bolts can be accessed for removal.

Locking the engine and unbolting the cylinder head

TOP dead centre (TDC) is the highest point in the cylinder that each piston reaches as the crankshaft turns. Each piston reaches TDC at the end of the compression stroke and again at the end of the exhaust stroke.

Our engine needs to be locked in the TDC position for No.1 piston (furthest forward in the Td5 engine bay) before the timing chain sprocket is disconnected from the camshaft. To do this, suitable tools are required to lock both the camshaft and the flywheel in their relative timed position. This way, when the cylinder head is removed and subsequently refitted – or replaced with a new head – the camshaft and crankshaft remain perfectly timed together and will work correctly. Basically stated, the engine needs to put back together in exactly the same relative position that it was taken apart. If not, the engine will not start up or run properly again.



Top dead centre

18 TDC needs to be found for No.1 piston by rotating the crankshaft with a socket until this mark on the sprocket is aligned with the coloured chain links.



Timing pins

19 Suitable tools are needed to lock the flywheel and camshaft in position after TDC for No.1 piston is found. This proprietary set costs around £10.



Back or forth a little

20 The camshaft pin is inserted through the hole in the camshaft carrier into the camshaft. The crank may need a nudge forwards or backwards to align the holes.



Crank lock

21 Underneath, the flywheel timing pin is inserted through the bellhousing and into the timing hole in the flywheel. The crank and camshafts are now both locked.



New copper washer

22 The timing chain tensioner is loosened from the right of the cylinder head, unscrewed and withdrawn completely. The sealing washer needs to be replaced.



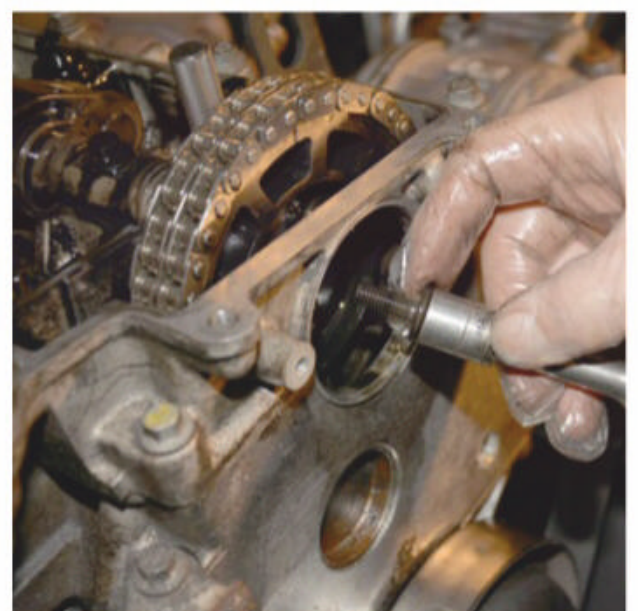
Disconnect the guide

23 This Allen screw, which is being removed, secures the top of the timing chain fixed guide to the cylinder head, and will allow the head to lift clear of it.



Stay where you are

24 The three screws that hold the sprocket to the camshaft are removed, so that the chain and sprocket will stay in place when the cylinder head is removed.



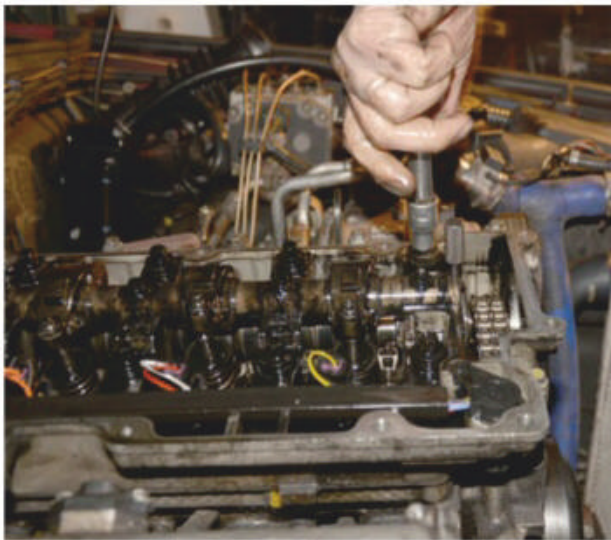
Don't drop the screws

25 It is vital not to drop the screws as they are removed, because if any fell into the engine it would be very difficult to retrieve them again.



Work the sequence

26 The cylinder head bolts are gradually loosened in the reverse sequence to which they are tightened: so we loosen from each end, working towards the centre.



Long threads

27 As soon as the bolts are loosened, they can be spun by hand easily through many turns to fully unscrew them from the engine block.



Hindered

28 These two rear cylinder head bolts cannot be withdrawn completely from the engine, because there is not enough clearance at the back of the engine bay.



Just enough now

29 The engine bay seal is pulled clear, allowing the insulation to be tucked out of the way and now the bolts can be withdrawn completely.

Lifting the cylinder head off

BEFORE lifting the cylinder head off the engine, it is very important to have a suitable place to set it down, such as a clean bench. Blocks should be at the ready to rest the front and rear edge of the head onto, because setting it on a flat surface would damage the injector nozzles. Organise in advance, because the cylinder head is very heavy, even with two persons working on it, and has to be lifted from an awkward location. It will probably be necessary to tap the cylinder head with a soft mallet to free it from the block, prior to lifting – but do not try to lever the head apart from the block, as damage will certainly be caused to the mating surfaces.



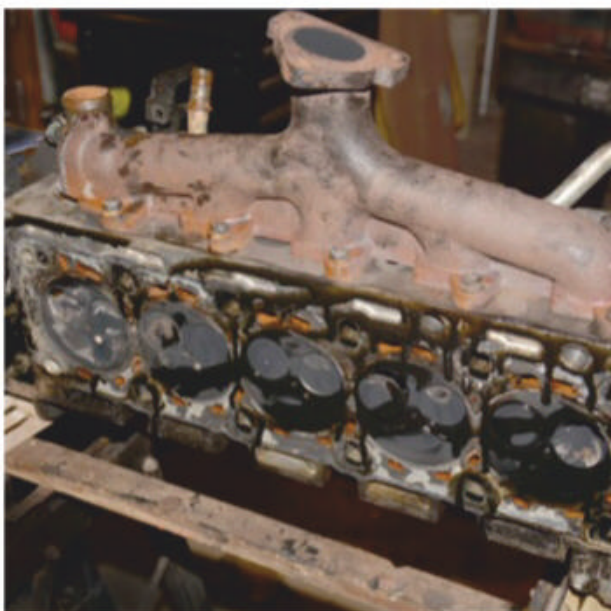
It takes four hands

30 The cylinder head cannot be lifted safely by one person, so two of us lifted it away from the block and out to the work bench.



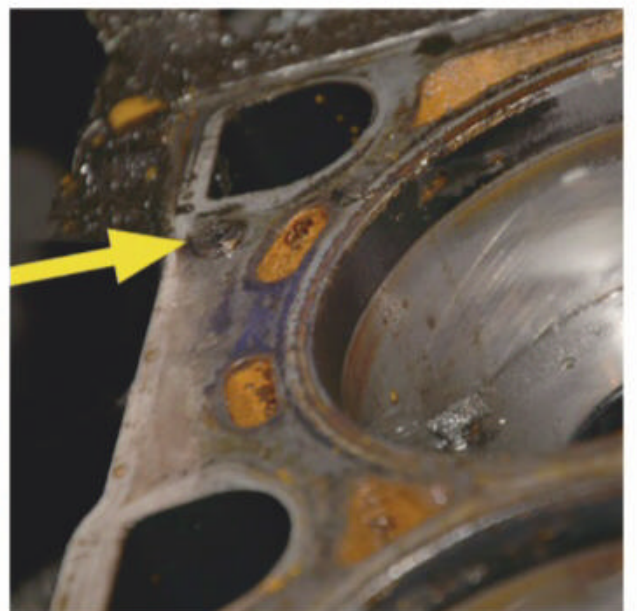
On blocks

31 The injector nozzles and valves project below the surface of the cylinder head, so it is set on blocks at each end to prevent damage.



Examination

32 Inspection of the cylinder head and the engine block can now commence to find the clues that will tell us what the issue was with the engine.



First impression

33 On the block, it is clear that the plastic dowels have disintegrated almost completely. This is one of the design faults of the earlier Td5 engines.

NEXT MONTH: We will carry out a thorough examination of the cylinder head and engine block, including the bores and pistons. This will determine the cause of the overheating and pressurising of the cooling system, and indicate what remedial action we need to carry out to put the engine right again.



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CONTRIBUTOR
ALISAIR
CUSICK

NEED TO KNOW

COST: Free

TIME: 30 mins

DIFFICULTY:

MODELS: Series I, II and IIA

TOOLS: 3/16 inch Whitworth spanners, 4BA spanners, screwdriver, power probe/battery and leads

WORK SAFELY:

- Disconnect the battery earth lead before working on electrical items
- Carry out testing using a vehicle battery on a bench
- Ensure temporary wiring connections from the battery to the horn are properly insulated to avoid electrical short circuits, and use a switch in the circuit to avoid sparks
- When using BA spanners on the points adjustment, take care they do not slip and thus round the corners off the nuts (metric spanners will slip, so buy a BA set)

Refurbishing a windtone horn

The horn on a Series I or II is part of the vehicle's old-world charm. Alisdair Cusick shows how to ensure yours plays the right tune

THERE isn't much in terms of standard electrical equipment on a Series I Land Rover, and it's generally all made by Lucas. We all know the old jokes — my favourite is the one about Genuine Lucas wiring loom smoke: "once it escapes, the electricity stops flowing". But in general, the Lucas components are so well made, that many items can be restored or adjusted back to full working health after many years' service.

So it is with the horn. Officially called the Lucas windtone horn and fitted to many cars from the 1930s onwards, it operates by using a diaphragm, via make-or-break electrical points. As the diaphragm moves, it excites a column of air, which is then funnelled down the horn, creating a note just like a brass instrument. As those make-or-break points wear, the effectiveness of the horn's note diminishes, first to an uneven squawk, then eventually to the point where it won't work at all.

If your Lucas horn is intermittent in operation, or the note or volume is weak,

issues will be down to three areas – wiring or earth connections, a failing switch, or it may just need the points adjusting. To be certain it is the latter, use a multimeter on the switch to first check that it makes a circuit as it should. If that works as intended, and there's no wiring damage, it is time to look at the horn.

Windtone horns were occasionally fitted in pairs: one giving high tone, the other a low tone. Another type of horn altogether was also used, and was carried over to Series II. It was made by Clear Hooters Ltd, of Hampton Street, Birmingham. Adjustment of Clear Hooters horns is broadly similar to Lucas, except they have a suggested measured points gap of between 1.1 and 1.3 mm.

This is one of those nice little jobs that gets results, restoring full function to your vehicle, and provides a little easy tinker time over the weekend. You also get to dust off those lovely old BA spanners you've got in your old toolkit. Don't forget to disconnect the battery earth lead before dealing with the wiring.



Power off

1 Undo the two power feeds and unclip them from the bonnet, noting which connects to which lead. Take care not to pull the bullet connectors off the wiring.



Release the horn

2 On this 1957 model the horn is mounted on the underside of the bonnet. Two 3/16 inch Whitworth spanners do the job. 1950s threads release easily.



Encouragement

3 It should slide off the bolts, though mine was stuck, so I carefully unwound the two bolts on the bonnet, taking care not to let the horn drop.



Not quite music

4 Try powering the horn on a bench. It needs a good amount of power, so use a 12 volt car battery. Mine gave a weak squeak, then nothing.



Get in there

5 We have to get inside. With a good-fitting screwdriver, undo the large brass screw on the top of the dome (a poor-fitting screwdriver will tear the brass).



Remove it

6 Carefully ease the dome off, exposing the workings. Thread the wiring through the grommet. Clean out any dust. The last time these workings saw light it was 1957.



Empty the area

7 Remove the dome's mounting bar. Strictly, you don't need to do this, but it ensures nothing is loose when you're adjusting things or testing later.

Whilst you're there

8 We're adjusting these make-or-break points. They dance about when power is applied, transferring that movement to the resonating diaphragm, in turn pushing air to create the horn note.





How it works

9 This is the horn tube on the reverse. A simple, efficient way to produce a loud, strong note. Note it is riveted to the plate and not easy to separate.



Try a clean

10 Give the make-or-break faces a gentle clean. Keep the paper flat to try and preserve the level surfaces. Angles alter the contact area, therefore the efficiency.



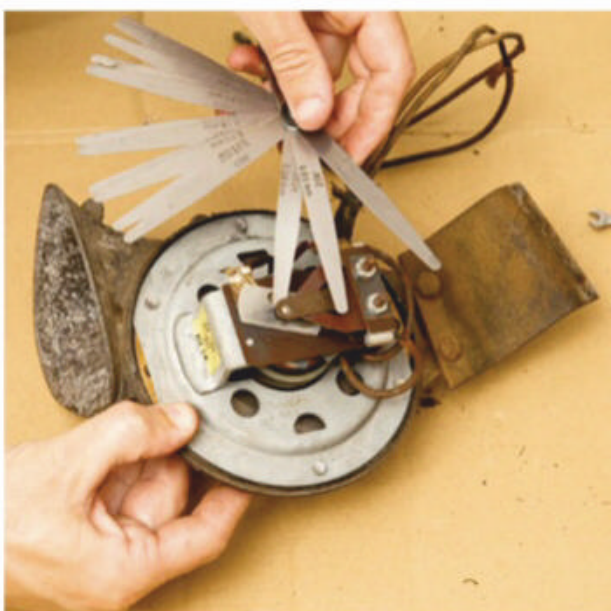
Old school tools

11 Use British Association (BA) spanners to adjust the contacts. These were common for smaller fixings on vehicles where BSF threads were used, such as SIs.



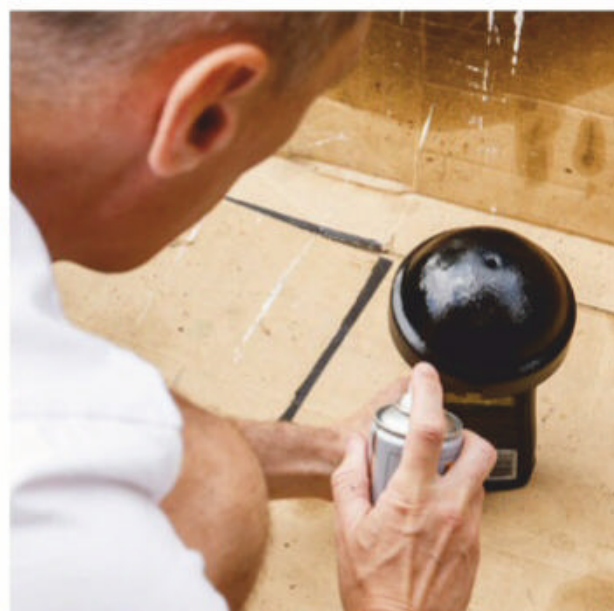
Mind the gap

12 Using two 4BA spanners, undo the lower locknut with one, then adjust the points gap with the other. I found a 0.06 mm gap produced a strong note again.



Success

13 Adjusting further, increased the attack and then volume. When happy, tighten the locknut or vibrations alter the points gap, taking them out of range again.



Little bit of love

14 Because the dome was a little tatty, I decided to rub it down, and paint it. I primed it with Corroless paint, then sprayed over with satin black.



Re-assemble

15 Refit the dome's mounting bar, thread the grommet and wiring through. I removed loose flakes from inside the horn with sandpaper, but kept the aged look.



Job done

16 Final job. Refitted back on the car, it gave a reliable, repeatable 'parp', louder than ever before. A slice of Mr Toad in your Series I, as specified by Solihull.

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CONTRIBUTOR
DAVE BARKER

NEED TO KNOW

COST: See below

TIME: Around 3 hours

DIFFICULTY: 1/5

The real difficulty is in removing the bumper and body trim sections

MODELS: Discovery 5

TOOLS: General workshop tools, torque wrench and diagnostic tool which may be needed to tell the Discovery that a towing electrics harness and socket has been fitted

PARTS & COSTS:

- Two tow bars from Land Rover: a detachable with swan neck (VPLRT0171LR), and a fixed multi-height (VPLRT0175LR), £780 to £890 depending on supplier, plus fitting
- Aftermarket Witter tow bar kit, £360 to over £500 depending on supplier plus fitting
- Dedicated towing socket harness, £98, available as a Genuine or aftermarket part

CONTACT: MPB 4x4 Land Rover Specialists, Unit 2, Holme Mill Ind Est, Holme Mill Land, Keighley BD22 6BN. Tel: 01535 661203; mpb4x4.co.uk

WORK SAFELY:

- Ensure vehicle lifting and support equipment is rated for the weight of the vehicle
- Ensure vehicle is secure on the lift, especially if a wheels-free post ramp
- Wear appropriate gloves and masks, and use eye protection when working overhead

Fitting an aftermarket tow bar and electrics

You won't get a boat with your Discovery 5, and you might not even get a tow hitch. Dave Barker explains how to fit one

THE Discovery 3 and 4 were built almost ready to tow. The rear of the chassis had a tow bar receiver mounting, to which a quick-release detachable tow hitch could be easily fitted and removed. The towing electrics could be added as required, be it a 7-pin, a twin 7-pin or the now standard 13-pin socket. An adjustable-height tow bar could also be fitted, recommended for regular heavy trailer towing, and featuring the traditional stay bars to the chassis.

Discovery 5 did not continue the easy-fit receiver towing system, which many felt was a retrograde step. The only option, if you wanted to tow a trailer or caravan, was to have a tow bar fitted. That involves removing the original rear armature (crossmember) and replacing it with a new tow bar armature which uses the same mountings and facilitates the option of a fixed multi-height hitch or a detachable swan neck type. Also,

the centre section of the rear valance needs to be replaced with a new panel to allow for the tow ball and electrical socket, or the original panel cut accordingly.

In this case, an aftermarket detachable swan neck tow bar and 13-pin electrics have been installed. Fitting the tow bar is not difficult, but getting to where you need to work is. In this case, the complete rear bumper is removed and several side sections of trim and rear lighting. Both rear silencers need to be lowered to fit a retaining bolt through the rear body shell, securing the tow bar fixing bracket into position. The centre section of the rear bumper, which is removable to access a standard swan neck tow bar, will also need to be replaced if you are fitting a detachable or multi-height tow bar. The new section of rear bumper is differently shaped to accommodate the tow bar and electrical socket.

Different tow bar options are available from suppliers, so always check you are buying the correct kit for your Discovery, and that it's suitable for the type of towing you intend. Most electrical kits simply plug into the Discovery's wiring. The Genuine Land Rover kit needs the vehicle to be programmed to recognise the new towing electrics, though some aftermarket socket harnesses do not require this. Some towing harness kits are not suitable if the trailer or caravan has LED lights, so always check before buying, especially if buying online.



Witter tow car kit, plus accessories

Gaining access



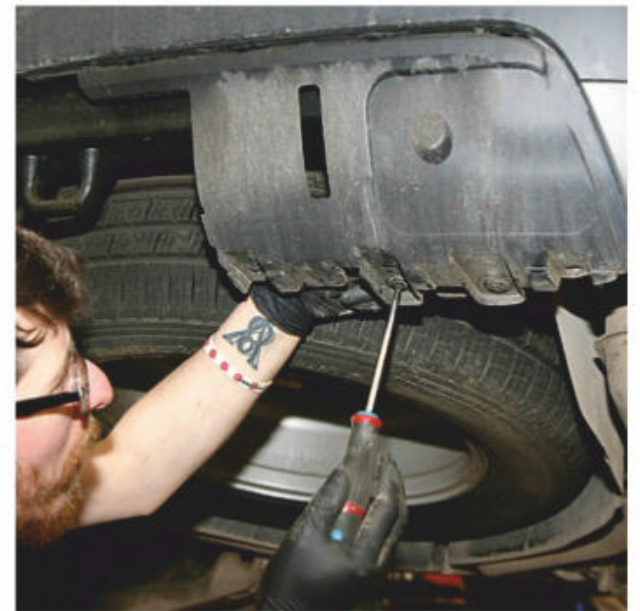
Getting started

1 The job involves working along the bottom edge of the vehicle so, if possible, raising it securely and safely on a vehicle lift makes the job much easier.



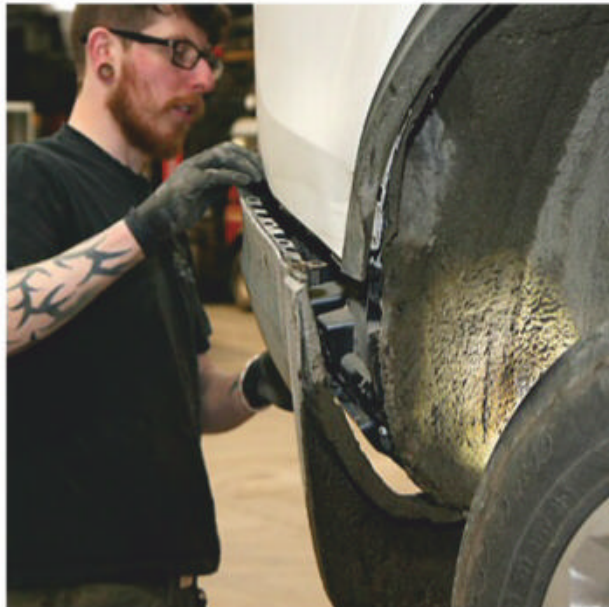
Unscrew, unclip

2 Undo the four turn-screw clips securing the centre valance trim onto the main section of the rear bumper. The centre valance can then be unclipped.



More screws

3 Continue unscrewing the various trim fasteners and screws that hold the main section of the rear bumper panel onto the vehicle's main bodywork at each side.



Arches

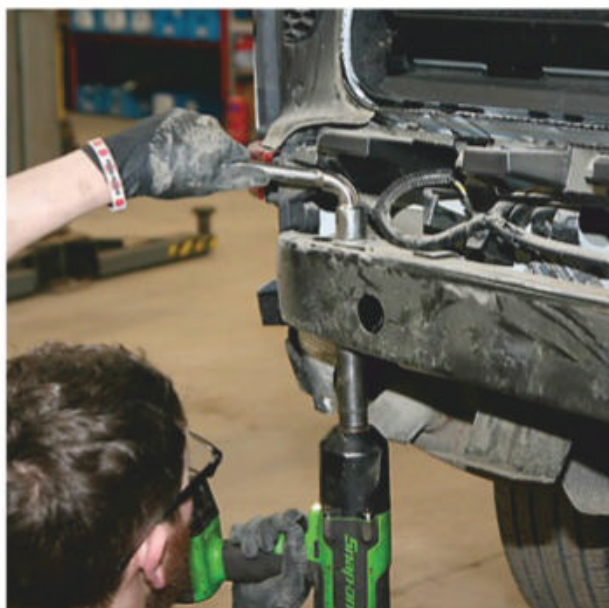
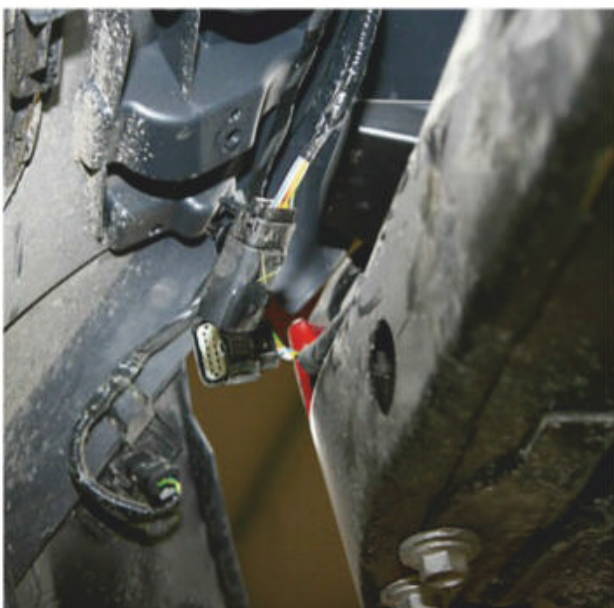
4 Before the rear bumper section can be removed, the rear portion of the wheel arch trim section needs to be released on each side, again held by screws.

Pull off

5 The side sections of the rear bumper are unhooked and released from the bodywork. Take care, as the bumper is held by several easily broken plastic clips.

Pull away

6 Once both sides have been fully released from the bodywork, the main bumper section can be pushed upwards and unhooked from the bodywork.



Disconnect

7 Before the rear bumper section is fully removed, the rear parking sensors multi-plug behind the bumper is unplugged, then bumper is lifted away.

Big bolts

8 Remove the four vertical bolts and nuts securing the rear armature (crossmember) onto a mounting socket which is set into Discovery's body shell.

Take off

9 The rear armature (crossmember) is now lifted from its mounting sockets and removed. We now also need to remove the mounting sockets from the body.



Mounting sockets

10 The sockets are held by two bolts underneath and two upper bolts seen here, the outer of which needs the side trim mounting and light (left) removed.



More to remove

11 The side trim mounting assemblies, one each side, are secured into position by a number of trim screws which are easily accessible for removal.



Unplug and away

12 Before the side trim mounting assembly can be taken off, the vehicle's rear fog light assemblies need to be disconnected, unplugged and removed.



Sockets away

13 Now the two upper bolts are easily released, followed by these lower bolts, and the armature sockets can then be slid out and discarded.



Installing the towbar hardware

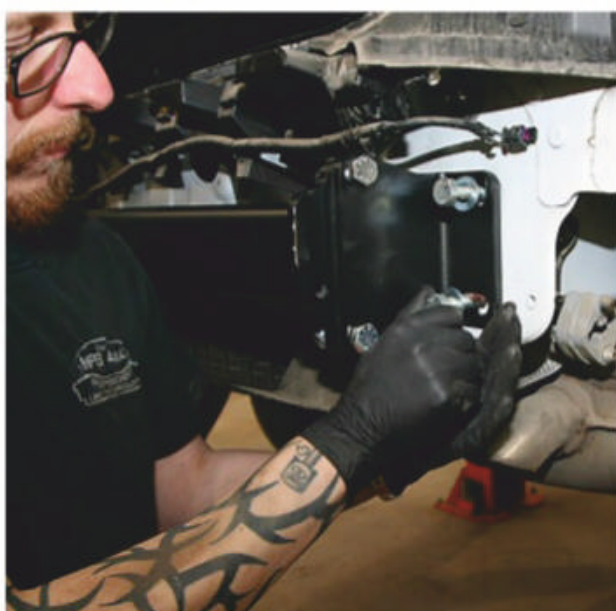


Assemble loosely

14 Two side mounting plates are positioned in the armature mounts recesses. New bar is bolted to armature upper inboard mount holes.

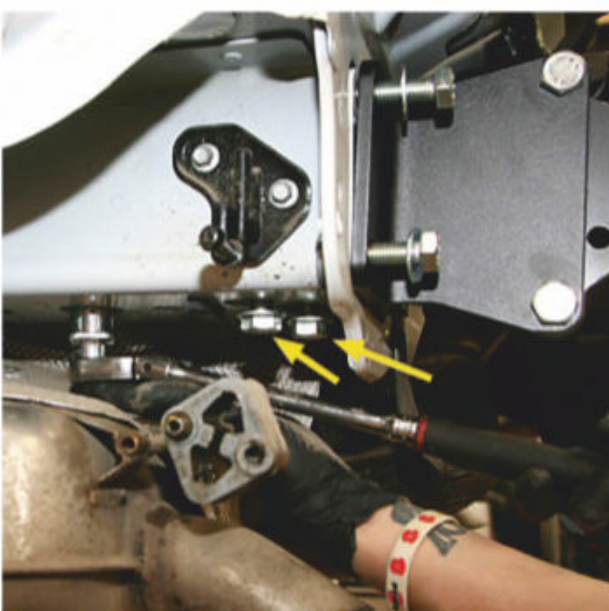
Attach angle brackets

15 An angle bracket is fitted at each end of the bar with two bolts that pass through the angle bracket, mounting plate (positioned earlier) and the towbar end flanges.



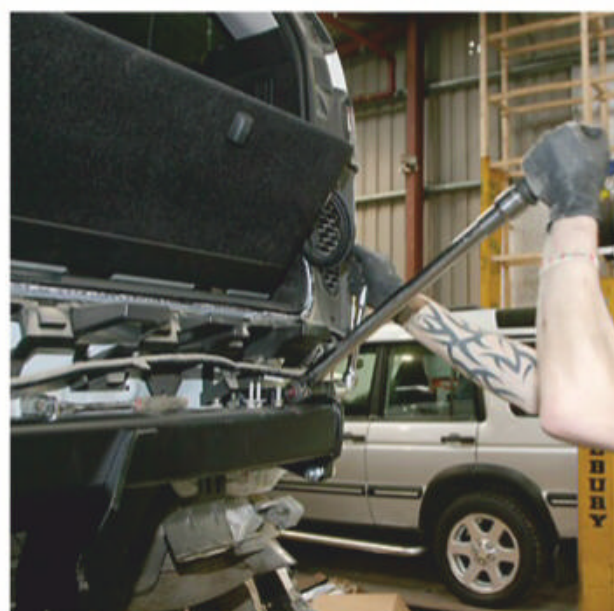
Bracket to body

16 With the assembly loosely bolted, two more bolts on each side hold the angle brackets loosely to the body using the redundant armature mount outer holes.



Underside bolts

17 Two more bolts (arrowed) are fitted from the underside up into each side mounting plate. To fit the third bolt, detach the exhaust hanger.



Tightened and torqued

18 The loose mounting bolts can now be tightened to the correct torque to secure the tow bar to its mounting brackets, and the brackets to the body shell.

Electrical connections



Unclip

19 After refitting the exhaust hanger and the side trim mounting assembly, the tail gate seal and the trim and vent panel on the rear wing quarter are removed.



Thread the harness

20 The tow bar's 13-pin electrical harness is now fed upwards from the tow bar, and led to a control box secured in the wing recess with double-sided tape.



Plug in

21 Once the towing socket harness is safely routed and secured to prevent chafing on body parts, its connector is clipped into the Discovery's towing-ready multi-plug.



Reassemble

22 The body parts, exhaust, bumper, fog lamps and park sensor connector are now refitted – except for the rear bumper's new centre valance, which will be fitted last.



The hitch

23 The swan neck tow hitch and its mounting receiver, along with the movable 13 pin socket mount can now be bolted into position and torqued tight.



Trailer connection

24 The pre-wired socket with sealing ring is screwed onto its mounting plate which rotates on its bolt for best position. Blue tow hitch release handle is arrowed.



Cover up

25 After checking tow hitch removes and refits easily, new rear centre valance is fitted, covering ball and socket, and still allowing access to them both.



Plug and play

26 A diagnostic system is now used to programme the Discovery 5's electronic systems to accept and work with the towing electrics kit that has been fitted.

LRM PRODUCT TEST



Metal folders

Bending metal accurately and easily will raise your repair game, says Gary Stretton

CREATING accurate pieces of sheet metalwork for repair sections and bespoke fabrication to pro standards can be done with an affordable sheet metal folder. Kiss goodbye to bench vices and hammers; it's time to raise your game. Pin-sharp folds and correctly angled metal can be consistently made with a sheet metal folder, minimising fettling and additional rectification processes.

All the folders tested here can be independently mounted on a bench or purpose-made stands (not included). None are vice mounted. It's an important distinction, because, in my experience, relying on a vice for stability while you exert huge amounts of force can wreck your vice and more likely your bench due to the small area of resistance offered by the small vice base plate. A correctly spread load is easier to exert and will help create superior fabrication work.

Choosing a folder depends on the size and nature of the fabrication required. Smaller repairs and fabrications will be fine with a 12 inch (300 mm) wide version, while larger sections will need double that. If 300 mm doesn't seem very large, consider how many bodywork repair

sections are larger than that and requiring folds: not too many. Wider folders definitely have their merits for large bespoke fabrication, but it's important to choose a model able to deliver consistent folds along its full width. Cheaper versions suffer from flexing at their centre and this is amplified in the finished panel, so strengthened (anti-flex) top plates (or beams) are essential.

Sheet metal thicknesses are very important, as the types tested are intended for light panel work up to 1.5 mm in aluminium and 1.0-1.2 mm in mild steel. Chassis box sections and thicker gauge work cannot be made with these types of folders. Instead, much larger folders costing thousands are required – it's best to simply buy box section material and cut it accordingly.

Primarily, the test is about accuracy and ease when folding metal to 90 degrees and beyond, although some folders have additional features you'll likely find useful. These are taken into account for the test, but only assuming the folder can fold satisfactorily. Box pan folders allow the construction of pieces folded on all four sides, if necessary, and come into their own for this ability.

Here's what to look for...



Access is key to working in confined spaces so an adaptable tool counts



Clamping sheet material easily and safely is a huge plus



Folding action should be smooth and progressive with much leverage



Additional features can prove very useful

SEALEY 700 mm vice/bench-mounted folder

Simple construction for bench or vice use with good width



Sharp right-angle achieved in 1.2 mm aluminium



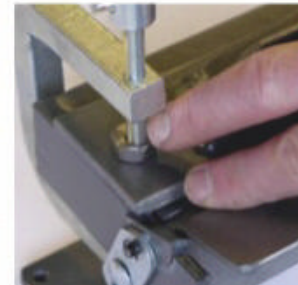
PRICE: Typically £145

CONTACT: sealey.co.uk (Item TS01)

A compact folder offering 700 mm of folds. No-frills approach is a simple clamping arrangement with a strengthened and tensionable top plate. The cam is easy to use and good results in aluminium and 1.2 mm steel were achieved. Open ends allow longer pieces to be made in stages.

KEY FEATURES:

- Folding width: 700 mm
- Folding angle max: 100 degrees
- Sheet metal capacity: 2 mm steel or 2 mm rod
- Centre strengthening brace: Yes
- Adjustable top plate: Yes
- Open ends for longer folds
- Spares available



Easily adjustable cam for different metal thickness



Centre adjustment nut, for maintained pressure

STAKESY'S 760 mm brake folder

Plenty of width for large pieces



Excellent bend quality to 135 degrees possible

PRICE: Typically £119

CONTACT: stakesys.co.uk (Item SFE760X1)

EASY to set up and use within minutes, with excellent stability plus 760 mm of folding ability. Spring loaded pressure clamp nuts keep the top plate stable while metal is positioned. Plenty of folding torque via both handles. We used G-clamps to hold it to the bench successfully for 1.2 mm aluminium, but fully bolted to a bench is the correct fitting method.

KEY FEATURES:

- Folding width: 760 mm
- Folding angle max: 135 degrees
- Sheet metal capacity: 1 mm steel, 1.6 mm aluminium
- Centre strengthening brace: Yes
- Adjustable top plate: Yes



Strengthened top plate for consistent folds in centre of work



Adjustable top plate for varying material thicknesses

STAKESY'S 610 mm brake folder



Sturdy with excellent build quality and ease of use

Excellent bend in 1 mm zinc coated steel

LAND ROVER
MONTHLY
DIY WINNER

PRODUCT TEST 2020

PRICE: Typically £249
CONTACT: stakesys.co.uk (Item SFX610X1)

ALTHOUGH slightly smaller than the 760 model, the 610 is a step up to pro standards with fully adjustable top plate, and made with ground bending faces for durability. The clamping mechanism is a delight and it created an excellent fold in our 460 mm 1.0 mm zinc steel test piece.

KEY FEATURES:

- Folding width: 610 mm
- Folding angle max: 135 degrees
- Sheet metal capacity: Mild steel 1 mm, Aluminium 1.6 mm, s/steel 0.8 mm
- Centre strengthening brace: Yes
- Adjustable clamping pressure: Yes
- Adjustable fore and aft top plate: Yes
- Ground bending faces
- Weight 31 kg (gross)



Full adjustments for pressure and sheet thickness



Clever cam clamping feature is accurate and single-handed

CLARKE 3-in-1 folder



Looks are deceiving. This little powerhouse weighs 43 kg

LAND ROVER
MONTHLY
HIGHLY COMMENDED

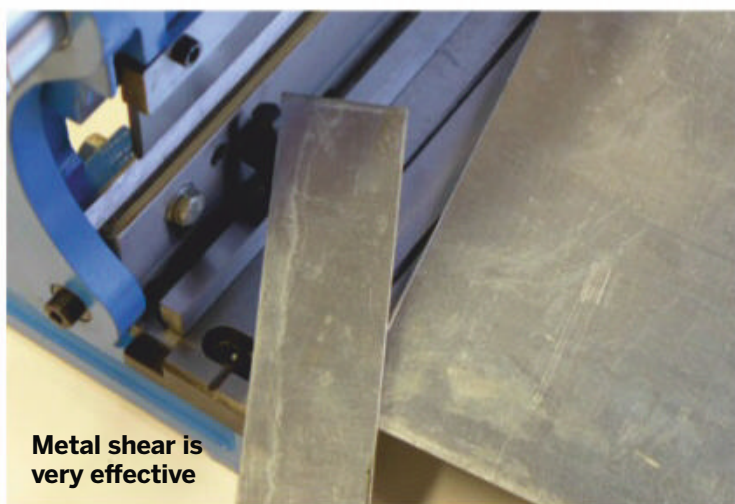
PRODUCT TEST 2020

PRICE: Typically £286.80
CONTACT: machinemart.co.uk (Item 051210305)

ONCE you get over the anchor-like weight, this formidable piece of kit delivers a lot in a small space. The bending brake works without a hitch and is easily controllable via the adjustable crank handle. The shears are certainly effective and accurate. We even managed to roll a 0.8 mm stainless steel cylindrical bracket. The full spec is impressive.

KEY FEATURES:

- Folding and cutting width: 305 mm
- Folding angle max: 90 degrees
- Sheet metal capacity: Mild steel 1 mm
- Segmented press brake for box and pan
- Reversible shear blades, hardened and ground
- Front squaring block
- Cylinder rollers (min 39 mm dia)
- Weight 43 kg (gross)



Metal shear is very effective



Features include metal shears, cylinder roller, and reverse bending



Removable brake fingers allow box construction

WARCO 24" box pan folder



LAND ROVER MONTHLY PRO CHOICE

PRODUCT TEST 2020

PRICE: Typically £380
CONTACT: warco.co.uk (Item 7027)

A pro-use folder that's neither intimidating nor difficult to use. Plenty of clamping force, easily applied single-handedly and good leverage for creating folds. The removable fingers aren't fiddly to adjust, remove or reset and the folds created are neat and consistent.

KEY FEATURES:

- Folding width: 610 mm
- Folding angle max: 135 degrees
- Sheet metal capacity: Mild steel 1 mm, aluminium 1.5 mm
- Removable ground steel fingers for box folding
- Cam action top beam clamping
- Centre strengthening brace: Yes
- Adjustable clamping pressure: Yes
- Distance between fingers and bed 23 mm
- Weight 42 kg

Pro quality with stability and accuracy



Box shapes possible thanks to removable fingers



Fully adjustable for sheet materials



Accurate folds created without fuss or exertion

VERDICT

THERE are several ways to bend metal using basic tools but, for accuracy and ease, a decent metal folder can't be surpassed. Finding one to suit your needs will save you wasting material unnecessarily and will improve fit and finish. All five on test created folds along their lengths you'd be happy to use for most tasks. Some achieved them more easily than others, elevating confidence levels in use.

Sealey's folder is a good solution for occasional use or where on-the-hoof repairs are required from a vice-held folder. It created good folds and is only marked down due to the fiddly operation of setting up each piece of sheet material. The open ends are to be commended for any length folding, but the base clamp system is not best suited for regular use.

The larger **Stakesy's 760** takes the basic premise of the Sealey model but allows more to be achieved, more accurately and with far less effort. The spring-loaded clamp plate works well and, once positioned, there's plenty of leverage from the widely spaced handles. It's a great price, too.

The smaller **Stakesy's 610** is a cinch to use. The cam operated clamping mechanism is a delight, and the folds created

were sharp and of excellent quality. The deep moving plate offers plenty of sheet material support when larger pieces go vertical. Impressive.

Clarke's 3-in-1 was a huge surprise from the moment it was delivered due to its considerable weight for its compact size. The vertically acting bending mechanism is unlike the others tested and it worked a treat, creating small, accurate folds for our box test piece and larger 90 degree bends in larger sheets. It has so many features and adjustables you'd need a day to work through them all. The metal shears will prove very useful for many, and we even managed to roll a stainless steel cylinder bracket. If the 305 mm folding width is enough for your needs, it's a DIY powerhouse.

Warco's pro quality 24 inch box pan folder is what regular sheet metal workers would like to use for involved, intricate fabrication. It's well designed, with an excellent cam clamping mechanism, fully adjustable to suit many materials and delivers crisp folds without fuss. The removable fingers are user-friendly, so



adapting them is quick and easy.

And so to the awards. Clarke's 3-in-1 deserves a **Highly Recommended** mention for its considerable features and abilities within the confines of its 305 mm width.

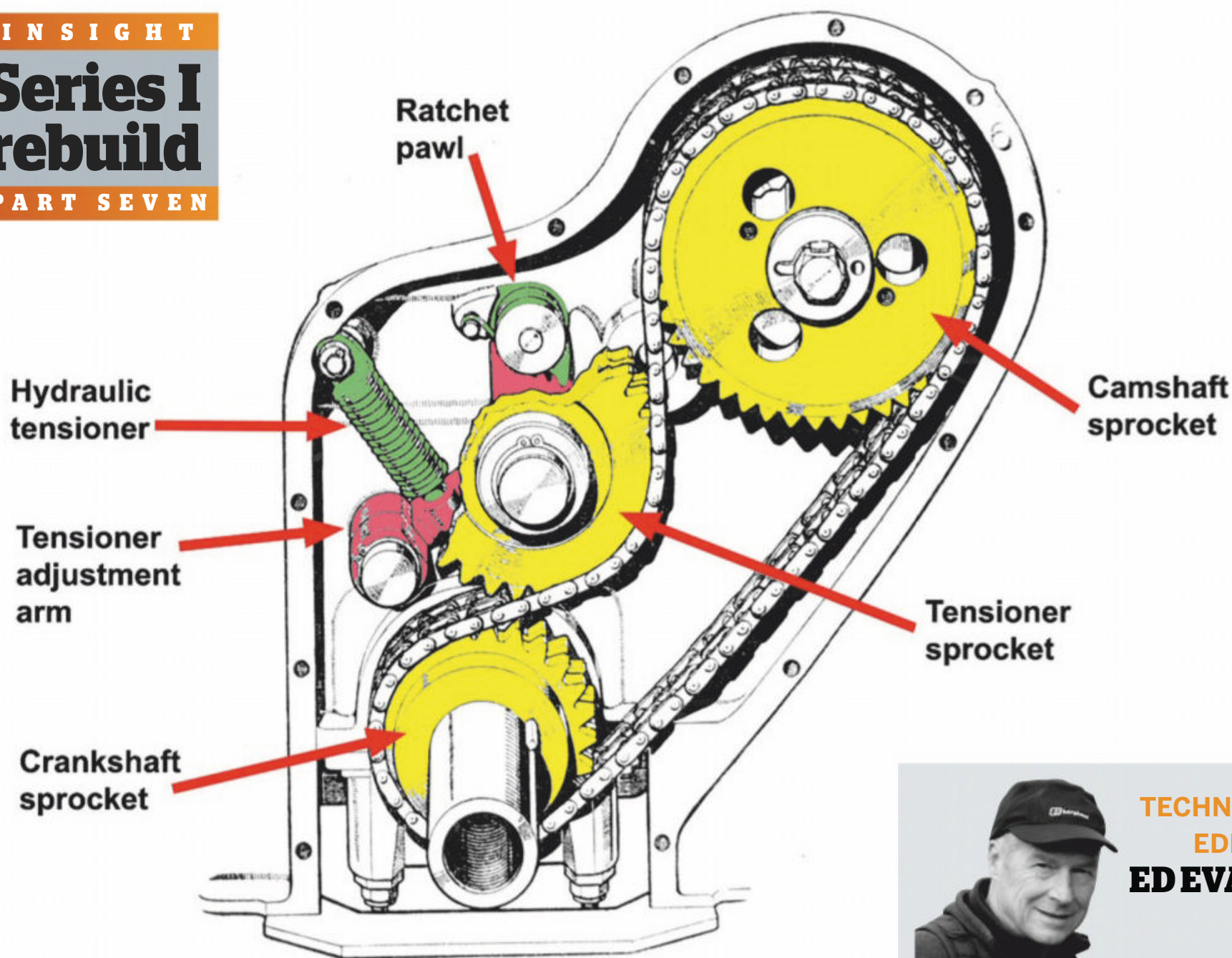
The basic **DIY folder winner** goes to the Stakesy's 610 for its quality approach to keeping folding accuracy simple, user-friendly and affordable.

Our **Pro Choice** award goes to Warco, for quality construction, ease of use and sheer versatility available on your home or workshop bench. It will raise your game.

INSIGHT

Series I rebuild

PART SEVEN



Engine build - timing gear

Preparation and patience ensure the Series I petrol engine's crank and camshaft work harmoniously. Ed Evans explains



Story so far

This rare 1949 Series I owned by Britpart's Paul Myers was bought as a stalled project with the chassis restored and an assortment of new, old and partly refurbished body panels loosely fitted for delivery. The body is now restored and built up onto the chassis, with the wiring loom and fuel and brake pipes fitted. The rebuilt transmission is installed, too, and we're currently rebuilding the dismantled engine

LAST month the flywheel, camshaft and lower rocker assemblies were installed in the engine block. We now need to time the camshaft with the crankshaft so that it opens and closes the inlet and exhaust valves at the correct time in relation to the piston positions. To achieve this we'll fit number 1 exhaust valve and set its tappet clearance to 0.010 inch and then use a dial test indicator (DTI) on the valve head to confirm its position as the camshaft is turned. That will set the camshaft in its exact timing position, then the crankshaft will be rotated into its own timing position, bringing the number 1 piston to top dead centre, and away we go.

Steve Grant is doing the work in the Britpart workshop and, as usual, all the parts have been laid out and checked before starting the job.



TECHNICAL EDITOR
ED EVANS

NEED TO KNOW

COST: Timing chain (ETC4499), £6 to £25. Other parts as sourced

TIME: 2 hours

DIFFICULTY: 🐣🐣🐣🐣🐣

MODELS: Series I

TOOLS: General workshop tools, torque wrench, engine stand, valve spring compressor, Whitworth spanners

PARTS & COSTS:

Timing pin set, Laser Tools, £11.20
All supplied by BLRC Ltd

WORK SAFELY:

- Wear safety boots when working with heavy engine parts
- Avoid straining when lifting and ensure you can maintain balance and enlist helpers as required before lifting
- Ensure the engine is always stable and securely supported, ideally on a purpose-made engine stand
- Wear protective gloves

THANKS TO:

Steve Grant, Paul Myers and Britpart

Setting the camshaft and crankshaft positions



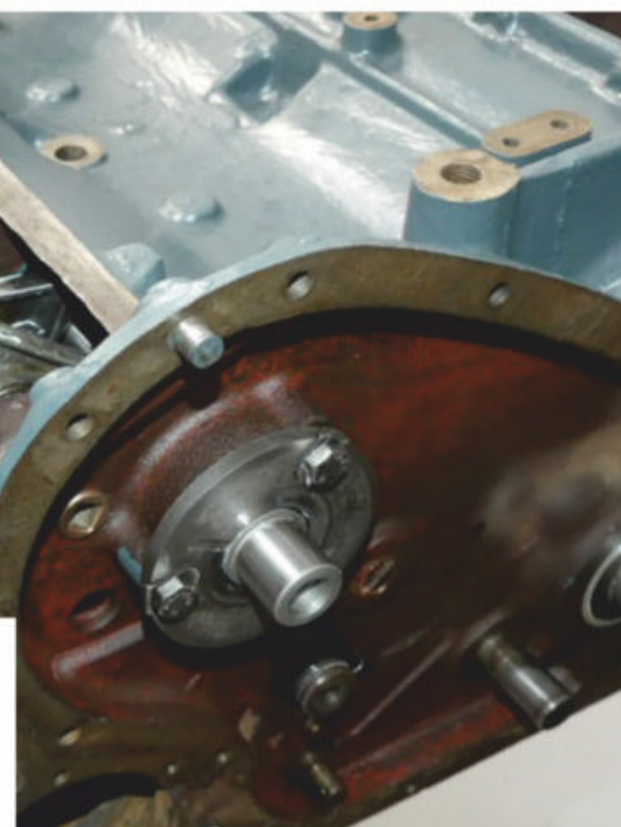
Cylinder 1 exhaust valve

1 With the engine inverted, number 1 exhaust valve spring seat (oiled) and double spring are placed in position, as the valve is fed in from the combustion chamber.



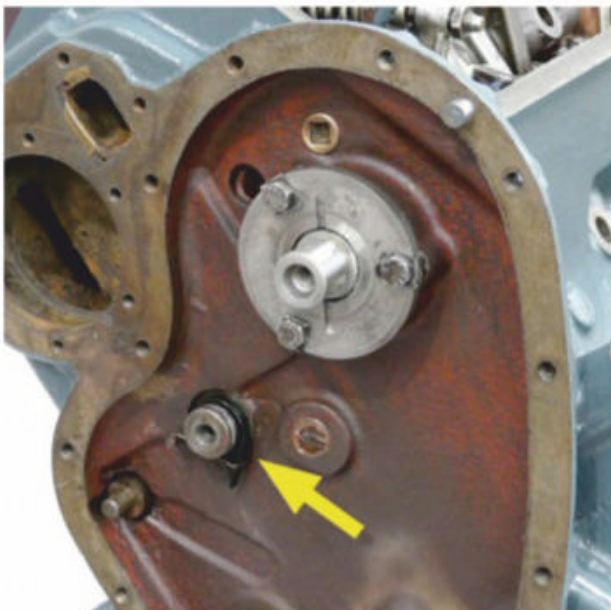
Collet

2 The spring compressor squeezes the spring to expose the top of the valve stem, and the split collet is fitted to hold the valve and springs together.



Positioned

3 Looking down on the top of the engine block, the first exhaust valve is in the combustion chamber, and that's the only valve needed for the cam timing.



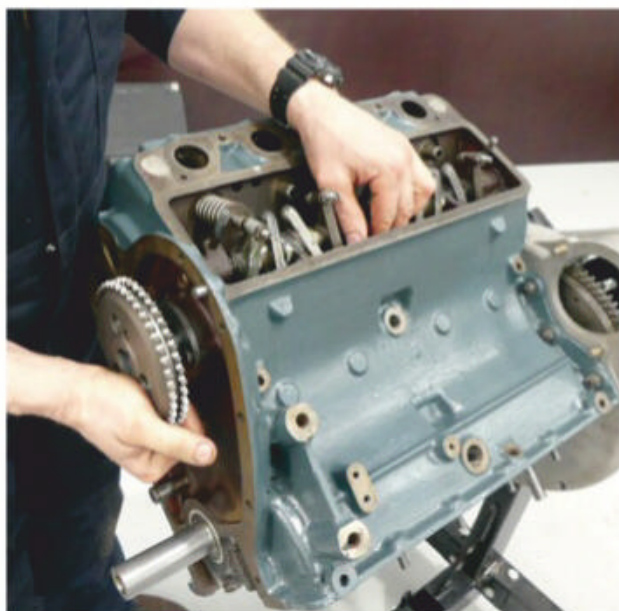
Ratchet pawl

4 The tensioner pawl (arrowed) is assembled on the front of the engine. This locks the tensioner sprocket position as it moves to take up chain wear over time.



Triple keyway

5 The camshaft sprocket has three keyways. This allows the sprocket to be fitted in the most appropriate choice of position during the timing procedure.



First check

6 The camshaft sprocket is tried onto the camshaft, while holding the camshaft to prevent it turning. The shaft was cleaned with fine wet and dry paper and WD40.



Top dead centre

7 A dial test indicator, held by a magnet to the block, shows minute valve movement as the camshaft is turned, confirming the amount of opening or closing.



Temporary pointer

8 The camshaft is rotated in its working direction until the DTI shows the valve is almost fully open, then the pointer position is marked on the sprocket.



Valve closing

9 With further rotation, the valve becomes fully open, then starts to close. When the DTI reading is the same as above, the sprocket is marked again.



Midway

10 A third mark is made midway between the first two, and the camshaft rotated back to align this with the pointer, at which the valve is exactly fully open.



Accuracy through visibility

11 Last month, the cam (lower) and ignition timing marks on the flywheel were highlighted yellow to make them visible through the timing window in the flywheel housing.



Exhaust peak

12 The crankshaft is rotated until the flywheel's EP mark meets the pointer in the housing. This is the correct crank position with exhaust valve 1 fully open.

Assembling the chain drive

WITH the crankshaft and camshaft in their correct relative positions, the timing gear can now be assembled. The crank and camshaft must stay in their present positions during the process, until the timing chain is fitted around the sprockets and tensioned, and the camshaft sprocket is bolted and locked.

Each sprocket is test fitted to its shaft to confirm that the assembly will slide on cleanly. The crank and cam sprockets and chain will be fitted together, aligning the cam sprocket's best keyway to ensure no chain sag between them before gently allowing the tensioner sprocket into position.



Tensioner arm

13 The jockey (or tension adjuster) arm is fitted onto its stub shaft, and the pawl, fitted earlier, is engaged onto the arm's ratchet teeth.



Special tool

14 The spring is fitted to the chain adjuster's cylinder assembly, and temporarily restrained by tool number 262748.



Test fit

15 Looking from above, after assembling the tensioner arm and spring mechanism, the tensioner sprocket is tried onto the pre-oiled stub shaft to check the fit.

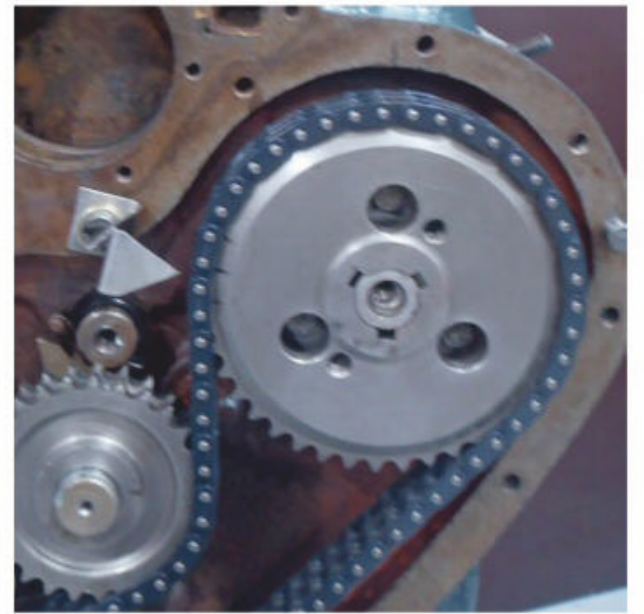
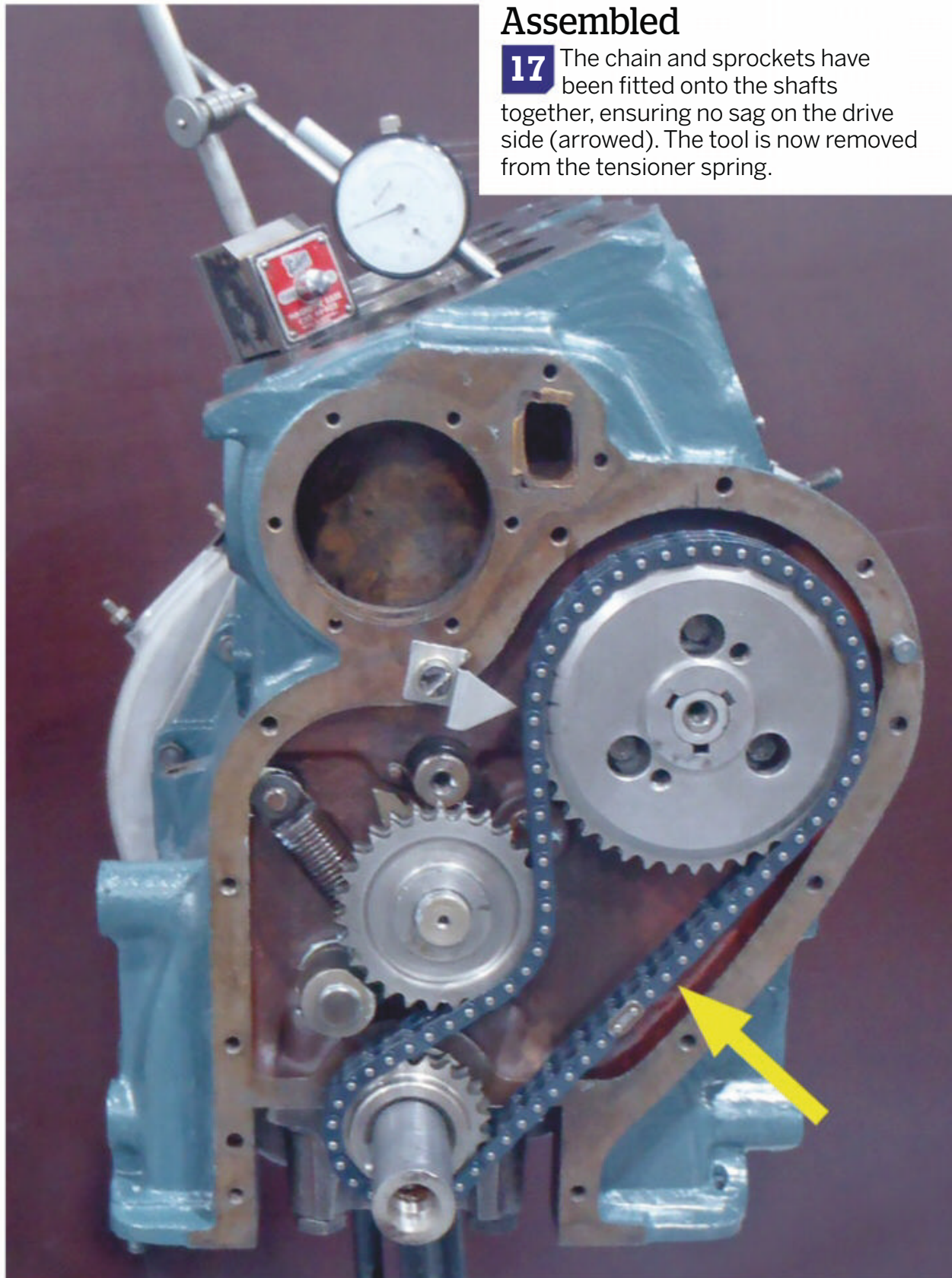


Leading sprocket

16 The crankshaft sprocket is fitted level with the camshaft sprocket, the chain fitted around both it and the cam sprocket, and the assembly is slid into place.

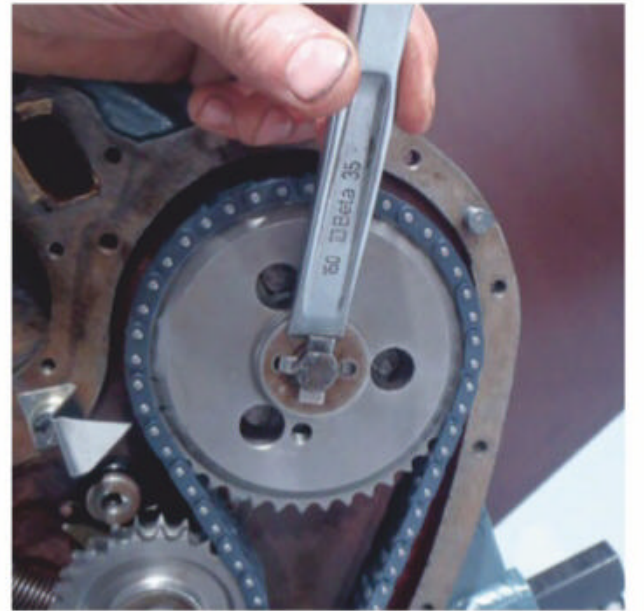
Assembled

17 The chain and sprockets have been fitted onto the shafts together, ensuring no sag on the drive side (arrowed). The tool is now removed from the tensioner spring.



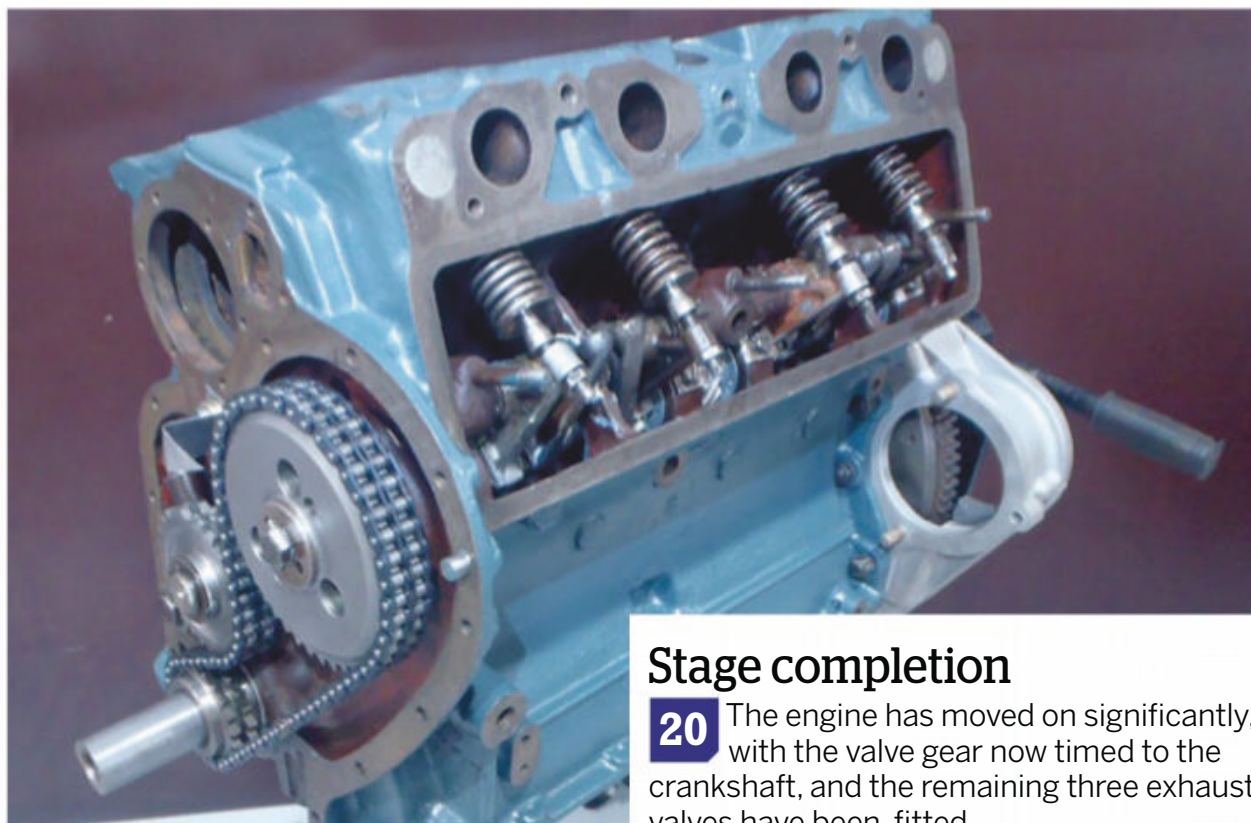
Final check

18 After rotating the engine to check the timing stays correct, there is the option to re-position the cam sprocket to another keyway, should adjustment be needed.



Locked up

19 Finally, the camshaft sprocket is secured with the bolt, the lock tab engaged and bent up against the bolt head. Tensioner sprocket circlip and spring retaining pin fitted.



Stage completion

20 The engine has moved on significantly, with the valve gear now timed to the crankshaft, and the remaining three exhaust valves have been fitted.



Closing up

21 After removing the pointer and fitting the crankshaft oil thrower, the front cover is fitted (gasket greased to aid future removal) and tightened gradually and evenly.

PCP Discovery
will cost you
£700 a month



Why it pays to buy new (sometimes)

Ever wondered why your neighbour can afford a new Land Rover but you can't? It's all down to PCP, says Dave Phillips

IT has never been easier, or more affordable, to buy a new car. That's because the market has been stagnant over the last couple of years, leading to manufacturers flooding the market with new models as well as tempting would-be customers with great deals — and the means to finance them.

We live in fast-moving times, with ever-tighter restrictions against diesel and petrol cars. Makers and dealers can't afford to have new stock hanging around when it will soon be outdated and fail to meet looming emissions targets. To get around this, and to meet sales targets, excess vehicles are often 'pre-registered' — which technically makes them secondhand, but the hefty discount you'll



Range Rover: depreciation is eye-watering

be offered may well tempt you.

But the main reason folk are buying new cars is the advent of PCPs (Personal Contract Plans) by manufacturers. It is estimated that 90 per cent of buyers of new cars in the UK do so with a PCP. Put simply, you pay a deposit, followed by monthly repayments (usually for 24, 36 or 48 months), then at the end of the contract you get the option to buy the car. Most buyers don't — instead they go through the whole process all over again with another new car.

If you've ever wondered how your neighbour who earns about the same as you can afford a new car every two or three years, now you know. Your neighbour isn't buying the cars, he is paying for the depreciation.

Of course, no Land Rover is cheap. A basic new Discovery SD4 diesel in SE spec would cost you almost £48,000 if you were to stump up the cash. But if you decide to 'buy' it via a PCP arranged by your local JLR dealer it will cost you a deposit of about £4800, followed by monthly repayments of £700. At the end of 36 months you get the option to buy it for about £21,000 (depending on depreciation and mileage). If you do, you're likely to have paid a total of just under £53,000.

With cars that depreciate rapidly, like the Range Rover, the PCP payments are an eye-opener. For example, an £84,000 SDV8 Vogue SE requires a £15,000 deposit, followed by 48 monthly payments of £900, after which you get the option to buy for about £34,000.

Never mind eye-opener, that sort of depreciation is eye-watering. But we all

knew that already, didn't we? If you want to lose a lot of money very quickly, buy a new Range Rover.

This easy finance means buying a new Land Rover has never been more attractive. But the eagle-eyed ones among you will have noticed that all those 'owners' passing up on the chance of buying their two-, three- or four-year-old vehicle at the end of its PCP period spells good news for folk looking for a secondhand car...



Millennial classic?

IT seems strange describing a 2001 Range Rover P38 as a classic, especially as this one was built in 2001, but it is nevertheless one of the lots in this spring's Classic Car Auction.

The 4.0-litre V8 comes in HSE spec, with just 42,000 miles on the clock. The auctioneer describes it as "in outstanding condition". There is no reserve.

The auction takes place on Saturday June 13 at the Warwickshire Event Centre near Leamington Spa, CV31 1XN. Tel: 01926 640 888, email: enquiries@classiccarauctions.co.uk, web: classiccarauctions.co.uk.



EARLY SERIES I 80", 1948 to 1953

THIS IS the ultimate classic Land Rover – 72 years old and more desirable than ever. The early 80-inch models fetch the highest prices. The earlier and more original, the better. Pre-production and historic examples are the most sought-after, and 1948-50 models the most expensive. Even barn-find derelicts are in demand for restoration projects. The Holy Grail of all Land Rovers is the missing centre-steer prototype from 1947 – if it still exists.

BUYER'S TIP: Join the Series One Club for parts and advice.

SPECIFICATIONS

1948-1951: 1.6-litre four-cylinder petrol, 55 bhp, 83 lb-ft torque. Four-speed manual, two-speed transfer box with permanent four-wheel drive (to 1950), later selectable. **1951-1953:** 2.0-litre four-cylinder petrol engine, 52 bhp, 101 lb-ft.

PRICE GUIDE

Poor: £3000 – £6500
Average: £6500 – £7800
Good: £7800 – £19,000
Excellent: £19,000 – £60,000



LATER SERIES I 86"/107"/88"/109", 1953 to 1958

THERE IS such a thing as a sensibly-priced Series I. The later models are better value than their early counterparts, as well as being more user-friendly and easier to drive. The distinctive 107-inch Station Wagons are extremely sought-after, and fetch the highest prices, while the long wheelbase pick-ups represent the best value. Check any prospective purchase for serious corrosion issues – an inherent problem with all early (and many later) Land Rovers.

BUYER'S TIP: Better everyday drivers than the 80-inch.

SPECIFICATIONS

1953-1957: 2.0-litre four-cylinder petrol engine, 52 bhp, 101 lb-ft torque. Also, **FROM 1957,** 2.0-litre four-cylinder diesel, 52 bhp, 87 lb-ft torque. Four-speed manual, two-speed transfer box with selectable four-wheel drive.

PRICE GUIDE

Poor: £2000 – £4000
Average: £4000 – £6000
Good: £6000 – £10,000
Excellent: £10,000 – £38,000



SERIES II/SERIES IIA 88" AND 109", 1958 to 1971

THE LAUNCH of the Series II in 1958 saw the arrival of the classic Land Rover shape that endured through to the 2016 Defender. Values of SIIs are rising – early MoT-exempt models especially. Some have been retro-fitted with Tdi engines, which help them keep up with modern traffic. A SII should be a good ride. If it isn't, check the leaf springs aren't badly rusted and seized – and consider replacing with more forgiving parabolics.

BUYER'S TIP: Affordable classic that holds its value.

SPECIFICATIONS

1958: 88s, diesels to 1961 and all transmissions same as Series I.

1958-1971: 2.25-litre four-cylinder petrol, 77 bhp, 124 lb-ft torque; 2.25-litre four-cylinder diesel, 62 bhp, 103 lb-ft torque.

1967-1971 (109 only): 2.6-litre six-cylinder petrol, 81 bhp, 132 lb-ft torque.

PRICE GUIDE

Poor: £1500 – £2300
Average: £2300 – £4000
Good: £4000 – £6000
Excellent: £6000 – £15,000



MILITARY LIGHTWEIGHT

88" SERIES II and SIII, 1968 to 1984

STAND TO attention! There's no messing with the tough, no-nonsense military version of the leaf-sprung Land Rover, built for the armed forces. In 1972 the military Series III got the same mechanical upgrades as the civilian model, including a five-bearing petrol engine and improved gearbox with synchromesh on all forward gears, and an alternator replaced the dynamo. Like all military Land Rovers, Lightweights are in demand with enthusiasts, so good ones fetch serious money.

BUYER'S TIP: Great fun in the summer.

SPECIFICATIONS

1968-1984: 2.25 petrol/diesel and transmissions as Series II and Series III.

PRICE GUIDE

Poor: £2000 – £3000
Average: £3000 – £6000
Good: £6000 – £7000
Excellent: £7000 – £18,000



RANGE ROVER 1 (CLASSIC)

1970 to 1996

EARLY THREE-DOOR examples command serious money and rarity, and classic car collectors are pushing prices up even further. But severe rust is the biggest enemy and the rarer parts are getting difficult to source. V8s are expensive to run, but the later Tdi diesels are reasonably frugal. Later models in good nick have been steadily rising in recent years, with high-spec versions like the Vogue SE or 4.2 LSE the most desirable.

BUYER'S TIP: Early three-doors fetch the most money.

SPECIFICATIONS

1971-1983: 3.5-litre V8, 125 bhp, 185 lb-ft torque. 1986-on 3.5 EFI: 165 bhp, 206 lb-ft. **1989-1996:** 3.9 EFI V8, 185 bhp, 235 lb-ft or 4.2-litre, 200 bhp. **1986-1992:** 2.4 VM turbo diesel, 112 bhp, 183 lb-ft, later 119 bhp 2.5.

PRICE GUIDE

Poor: £1000 – £2800
Average: £2800 – £5000
Good: £5000 – £7200
Excellent: £7200 – £50,000



SERIES III 88" AND 109", 1971 TO 1985

IF YOU'RE looking for a leaf-sprung Land Rover for a sensible price, the Series III is your answer. The collectability of SIIIs means they are no longer cheap as chips, but you can still find sensibly-priced examples. Parts are reasonably priced and readily available. The simplicity of the design makes them ideal for the home mechanic. Tidy originals command higher prices. The Stage One V8 is particularly sought-after. Look after your Series III and it will hold its value. Diesels dull.

BUYER'S TIP: Definitely worth investing.

SPECIFICATIONS

1971-1985: 2.25 petrol/diesel and transmissions as Series IIA, 2.6 six-cylinder produced up to 1979. **1979-1985:** Stage One (109 only) 3.5-litre V8 petrol, 91 bhp, 166 lb-ft torque. LT95 four-speed manual with permanent 4WD.

PRICE GUIDE

Poor: £1000 – £2000
Average: £2000 – £4300
Good: £4300 – £6000
Excellent: £6000 – £12,000



FORWARD CONTROLS

SERIES IIA, IIB – 1962 TO 1972; 101 – 1972 TO 1978

THESE ARE Land Rover's real-life monster trucks. Series IIA and IIB models had big-capacity load areas, but were blighted by underpowered engines. The later 101 Forward Control was a big military truck with a V8 petrol, thirstier than Oliver Reed at opening time. Some parts can be hard to find, but there's fantastic back-up from clubs, with loads of fellow enthusiasts. They certainly stand out from the crowd.

BUYER'S TIP: Do you have room for one on your drive?

SPECIFICATIONS

1962-1972: 2.6-litre six-cylinder petrol (SIIA/IIB), 81 bhp, 132 lb-ft torque. **1972-1978:** 3.5-litre V8 petrol (101), 128 bhp, 185 lb-ft torque. Four-speed LT95 gearbox with permanent four-wheel drive.

PRICE GUIDE

Poor: £2600 – £3700
Average: £3700 – £6700
Good: £6700 – £8000
Excellent: £8000 – £14,000



NINETY/ONE TEN

1983 TO 1990

DEFENDERS IN all but name, the first coil-sprung utilities gave you the choice of a sluggish diesel or a thirsty petrol V8 until the unreliable 85 bhp turbodiesel arrived in 1986. Many – perhaps most – have now been retro-fitted with later Tdi engines, which makes sense. Good ones defy the years and there's no shortage of spares. Prices are rising, not least because original examples over 25 years old can be exported to the USA.

BUYER'S TIP: Great value Defender precursors.

SPECIFICATIONS

1983-1985: Engines as Series III/Stage One V8. LT77 five-speed fitted to four-cylinder models.

1985-1990: 2.5-litre petrol, 80 bhp, 129 lb-ft torque; 2.5 diesel, 68 bhp, 113 lb-ft; 3.5 V8 petrol, 113 bhp, 185 lb-ft, 134 bhp from 1986. LT85 five-speed fitted to V8 models.

PRICE GUIDE

Poor: £4000 – £4600
Average: £4600 – £6000
Good: £6000 – £7700
Excellent: £7700 – £13,000



DISCOVERY 1

200TDI/300TDI/V8, 1990 to 1998

AFTER years of rock-bottom prices, values for good ones are now climbing. But the Disco 1 is still very affordable. It is capable off-road and refined too, but catastrophic body rust is a massive problem. Check out the floor, sills and inner wings and be prepared to get welding. Aftermarket panels cheap. If regularly serviced, 200Tdi and 300Tdi engines are pretty bulletproof. Early models now being snapped up by collectors..

BUYER'S TIP: Rust is the enemy, but parts are cheap.

SPECIFICATIONS

1989-1994: (200Tdi) 2.5-litre turbo diesel, 111 bhp, 195 lb-ft torque. LT77S five-speed transmission. **1994-1998:** (300Tdi) 2.5-litre turbo diesel, 111 bhp, 195 lb-ft torque. R380 five-speed transmission. V8s as Range Rover Classic.

PRICE GUIDE

Poor: £750 – £1000
Average: £1000 – £2700
Good: £2700 – £4200
Excellent: £4200 – £7500



DEFENDER TDi

200TDI/300TDI, 1990 to 1998

LAND ROVER workhorses were underpowered until the advent of the Tdi diesels. The 200Tdi was fitted from 1990 to 1994 and was superseded by the 300Tdi, which shared the same power and torque figures but was slightly more refined. This was the beginning of the golden era of Defenders and many would argue these were the greatest vehicles ever built. There has been a steady supply of serviceable engines and gearboxes from terminally-rusted and scrapped Discoverys of the same era, although they are now getting scarcer.

BUYER'S TIP: Grab one while you can.

SPECIFICATIONS

2.5-litre turbocharged, direct-injection diesel, 107 bhp, 195 lb-ft torque. LT77S (200Tdi) or R380 (300Tdi) five-speed transmission.

PRICE GUIDE

Poor: £4000 – £5000
Average: £5000 – £7000
Good: £7000 – £9800
Excellent: £9800 – £17,000



RANGE ROVER 2 (P38A)

1994 to 2002

BETTER THAN some would have you believe, the second-generation Range Rover's reputation for unreliability is sometimes undeserved. For a luxury 4x4, prices are very low. No serious rust issues to speak of and if you are handy with electrics and a laptop computer, you can use diagnostic software to solve most problems. Replacement parts can be pricey though. The diesel option is a BMW six-pot turbo. V8 petrols are thirsty.

BUYER'S TIP: 1990s luxury for not much money.

SPECIFICATIONS: 4.0: 4.0-litre V8 petrol, 185 bhp, 235 lb-ft torque. 4.6: 4.6-litre V8 petrol, 225 bhp, 277 lb-ft torque. 2.5: 2.5-litre six-cylinder turbo diesel, 134 bhp, 199 lb-ft torque. R380 manual or ZF four-speed auto, permanent four-wheel drive.

PRICE GUIDE:

Poor: £500 – £900;
Average: £900 – £1800
Good: £1800 – £3500
Excellent: £3500 – £6000



FREELANDER 1

1997 to 2006

AN AFFORDABLE entry-level Land Rover, and popular as ever. The 1.8-litre petrol engines can be troublesome and best avoided. The early diesels are economical, mechanically simple and reliable if properly serviced (and timing belts regularly renewed). The later Td4 is chain-driven, more or less bulletproof and the best choice. The Freelander has no rust issues to worry about. Great value.

BUYER'S TIP: Td4 diesels good for 200,000-plus miles.

SPECIFICATIONS

1997-2000: 1.8-litre four-cylinder petrol, 118 bhp, 121 lb-ft; 2.5-litre V6 petrol, 177 bhp, 177 lb-ft torque; 2.0-litre Rover four-cylinder turbodiesel, 96 bhp, 155 lb-ft torque. R380 five-speed transmission. **2000-2006:** 2.0-litre BMW Td4, 110 bhp, 192 lb-ft.

PRICE GUIDE

Poor: £400 – £900
Average: £900 – £2000
Good: £2000 – £3000
Excellent: £3000 – £5000



DISCOVERY 2

1998 to 2004

THE DISCOVERY 2 retained the stepped-roof looks and basic shape of its predecessor, but got an improved bodyshell and suspension, along with new engines and axles. It was the best-handling Land Rover in its day and there are plenty to choose from even now. V8 petrols are expensive to run, while as you might expect Td5 diesels are economical. The bodies last well, but the chassis is prone to spectacular levels of rust – putting some examples beyond economic repair.

BUYER'S TIP: Invest in a galvanised chassis and you've got a Disco for life.

SPECIFICATIONS

2.5-litre five-cylinder turbodiesel (Td5), 122 bhp, 221 lb-ft torque; 4.0-litre V8 petrol, 185 bhp, 235 lb-ft torque. R380 manual or ZF four-speed auto, permanent four-wheel drive.

PRICE GUIDE

Poor: £900 – £1500
Average: £1500 – £2500
Good: £2500 – £3700
Excellent: £3700 – £6000



DEFENDER Td5

1998 to 2007

THE FIVE-CYLINDER Td5 was the last Land Rover-derived diesel engine and it has proved pretty bulletproof over the years, provided it has been properly serviced. Now in great demand as prices for all Defenders steadily rise. There's a good number of special editions to choose from and, if you are looking for a utility vehicle, a healthy number of truck cabs and hard-tops are always on sale. Rear crossmembers prone to rust, but easily replaced. There is a growing supply of Td5 engines from Discovery 2s that are being scrapped due to serious rust issues. Non-OEM parts cheap.

BUYER'S TIP: Check service history.

SPECIFICATIONS

2.5-litre five-cylinder turbo diesel, 122 bhp, 221 lb-ft torque. R380 five-speed transmission, permanent four-wheel drive.

PRICE GUIDE

Poor: £5000 – £6000
Average: £6000 – £8000
Good: £8000 – £9900
Excellent: £9900 – £18,000



RANGE ROVER 3 (L322) 2002 to 2012

EARLY THIRD-GENERATION Range Rovers are now over 15 years old and can be picked up cheap, but don't underestimate the running costs – especially from petrol V8s. The diesel Td6 is less thirsty. Drivetrain and electrical faults are common, but the biggest problem is previous owners who have skimped on servicing and repairs and run them into the ground. Buy a neglected L322 and you're asking for trouble. When L322s start to go wrong, they get very expensive to put right and parts aren't cheap, either.

BUYER'S TIP: Prices falling, but beware of the dogs.

SPECIFICATIONS

2002-2005: 4.4-litre BMW V8 petrol, 282 bhp, 325 lb-ft torque. **2002-2007:** 3.0-litre BMW Td6 turbodiesel, 177 bhp, 287 lb-ft torque.

PRICE GUIDE

Poor: £1000 – £2500
Average: £2500 – £4000
Good: £4000 – £6000
Excellent: £6000 – £10,000



RANGE ROVER SPORT 1

2005 to 2013

THE SPORT fulfils the fast premium 4x4 segment with style. It shares the same platform as the Discovery 3/4 and is just as impressive off-road. A great long-distance cruiser and entertaining on the right roads. If you need a load-lugger though, the more versatile Discovery is better. Tyres, brakes and suspension tend to have a hard time, so buy carefully. Despite being replaced by the second-generation Sport, early models are still popular. But are they beginning to look a bit dated?

BUYER'S TIP: Values slowly falling. Be prepared to haggle.

SPECIFICATIONS

2005-2009: 2.7-litre V6 turbodiesel, 190 bhp, 324 lb-ft. 4.4-litre V8 petrol, 300 bhp, 313 lb-ft; Supercharged V8 390 bhp, 406 lb-ft. **2009-on:** 3.0-litre V6 diesel, 244 bhp, 442 lb-ft; 3.6-litre TDV8 diesel, 272 bhp, 472 lb-ft.

PRICE GUIDE

Poor: £4500 – £6700
Average: £6700 – £7900
Good: £7900 – £10,000
Excellent: £10,000 – £20,000



FREELANDER 2

2006 to 2015

A BIG improvement on Freelander 1. The towing capacity is just 2000 kg compared with the 3500 kg of bigger Land Rovers, but it's a worthy alternative to a Discovery. Lack of low-range and ground clearance prevents hardcore off-roading, but it is certainly still competent in the rough. Reasonable on fuel and with a decent-sized boot, too, there are no rust issues and it's ultra-reliable. Residual values are falling now it has been superseded by Discovery Sport, so it's a bit of a bargain.

BUYER'S TIP: An economical and trouble-free buy.

SPECIFICATIONS

2.2-litre four-cylinder turbodiesel, 150 bhp, 295 lb-ft torque. Six-speed manual gearbox with optional stop/start (eD4) or six-speed automatic. Permanent four-wheel drive.

PRICE GUIDE

Poor: £2900 – £4000
Average: £4000 – £7000
Good: £7000 – £8700
Excellent: £8700 – £12,000



DEFENDER TDCi

2007 to 2016

FOUR-CYLINDER FORD TDCi turbo-diesel (shared with the Transit van) matched to a six-speed gearbox and an all-new dashboard were all part of 2007's major revamp. The loss of the hinged front air vents and the distinctive humped bonnet aren't to everyone's taste, but the brilliant off-road ability remains. The original 2.4-litre engine was replaced in 2012 with a new 2.2-litre unit with better emissions.

Production ended in 2016 and an all-new model has recently been introduced.

BUYER'S TIP: Demand – and values – remain high as ever.

SPECIFICATIONS

2007-2012: 2.4-litre four-cylinder turbodiesel, 122 bhp, 221 lb-ft torque. **2012-on:** 2.2-litre four-cylinder turbo diesel, 122 bhp, 265 lb-ft torque. Six-speed MT85 gearbox, permanent four-wheel drive.

PRICE GUIDE

Poor: £6300 – £8500
Average: £8500 – £11,500
Good: £11,500 – £18,000
Excellent: £18,000 – £50,000



RANGE ROVER EVOQUE 1

2011 to 2018

NOT A favourite with Land Rover enthusiasts, but a huge hit with the general public who have turned it into the brand's best-selling model. 2WD is more economical, but 4WD is the better performer, and it's not bad off-road. Launched in 2011, there are lots available on the market – and some real bargains. The Evoque was updated for 2015, with styling tweaks and cleaner engines, and a convertible version arrived in 2016.

BUYER'S TIP: Problems with oil dilution on some diesel models.

SPECIFICATIONS

2.0-litre eD4 turbodiesel, 150 bhp, 280 lb-ft; 2.0-litre TD4 turbodiesel, 180 bhp, 317 lb-ft; 2.0-litre SD4 turbodiesel, 240hp, 369 lb-ft; 2.0-litre Si14 petrol, 240 bhp and 290 bhp, 251 lb-ft and 295 lb-ft. Six-speed manual or nine-speed auto. 2WD or 4WD.

PRICE GUIDE

Poor: £7900 – £12,000
Average: £12,000 – £15,000
Good: £15,000 – £18,000
Excellent: £18,000 – £40,000



RANGE ROVER 4 (L405)

2012 to present

WITH its aluminium chassis, the fourth-generation Range Rover is 420 kg lighter than its predecessor. Coupled with efficient new diesel engines, it's more frugal than any previous Rangie, too. It's all comparative though... Taking depreciation into account, it will be several years before secondhand models offer economical motoring. Make no mistake about it: this is a car for all the well-heeled.

BUYER'S TIP: A lot of car – for a lot of money.

SPECIFICATIONS

3.0-litre TDV6 turbodiesel, 258 bhp, 440 lb-ft; 4.4-litre SDV8 turbodiesel, 339 bhp, 472 lb-ft; 2.0-litre P400e petrol PHEV, 404 bhp, 472 lb-ft; 3.0-litre V6 s/c petrol 340 bhp, 332 lb-ft; 5.0-litre V8 s/c petrol, 525 bhp & 565 bhp, 461 lb-ft & 516 lb-ft. Eight-speed automatic gearbox.

PRICE GUIDE

Poor: £20,000 – £39,000
Average: £39,000 – £45,000
Good: £45,000 – £50,000
Excellent: £50,000 – £150,000



DISCOVERY

With lots of PCPs coming to an end (see page 150), there's a great choice of secondhand models on the market. Take your time and wait until the price is right – your reward will be ownership of the most versatile Land Rover of all.



DISCOVERY 3 / 4

2004 to 2017

THEY LOOK identical at first glance, but under the skin the third and fourth-generation Discoverys are very different. Early D3s suffered reliability issues, caused by water ingress into the electrics, but D4s are pretty bulletproof. No rust issues. Hugely capacious and versatile family cars, capable of seating seven. They have won countless awards for best tow car and look as stylish as ever. Gaining in popularity with enthusiasts now Defenders are getting so expensive.

BUYER'S TIP: Great value for money but parts can be expensive. Values falling.

SPECIFICATIONS

2.7-litre V6 turbo-diesel, 190bhp, 324 lb-ft torque.
4.4-litre V8 petrol, 300bhp, 313 lb-ft. 3.0-litre V6 turbo-diesel, 244 bhp, 442 lb-ft torque.

PRICE GUIDE

Poor: £2900 – £5000
Average: £5000 – £8200
Good: £8200 – £13000
Excellent: £13,000 – £36,000



RANGE ROVER SPORT 2

2013 to present

ALTHOUGH THE Range Rover Sport 2 is now cascading down to the secondhand market, a new one may prove a tempting purchase for those considering buying a secondhand Range Rover 4. It is £20k cheaper, and performance, handling and economy are all better than its big brother. Brilliant off-road, but unlikely to see much mud. It has a reputation for great reliability too.

BUYER'S TIP: Not cheap.

SPECIFICATIONS

SDV6: 3.0-litre, diesel; SDV8: 4.4-litre 339hp, diesel; P300: 2.0-litre 300hp, petrol; P400e: 2.0-litre 404hp, petrol PHEV; P400: 3.0-litre, 400hp, petrol; P525: 5.0-litre, V8, 525hp, supercharged petrol; P575: 5.0-litre V8 575hp, supercharged petrol. Eight-speed automatic gearbox.

PRICE GUIDE

Poor: £19,000 – £29,000
Average: £29,000 – £41,000
Good: £41,000 – £50,000
Excellent: £50,000 – £100,000



DISCOVERY SPORT

2015 to present

WHILE ON paper it replaces the Freelander 2, in reality the Discovery Sport is a very different beast altogether. Like all Land Rovers, it's built to be best in class off-road, but its on-road handling is astonishing, too. Its sure-footed handling on icy roads is nothing short of astonishing. Considering all the new cutting-edge technology, this versatile mid-size SUV represents excellent value for money, but 2016 model-year Ingenium diesels can suffer oil dilution problems.

BUYER'S TIP: Problems with oil dilution on some diesel models.

SPECIFICATIONS

2.0-litre eD4/TD4/SD4 turbodiesel, 148, 178 & 237 bhp, 280, 317 and 369 lb-ft; 2.0-litre petrol, 238 bhp, 251 lb-ft; 2.0-litre Si4 petrol 286 bhp and 295 lb-ft. Six-speed manual and nine-speed automatic gearboxes.

PRICE GUIDE

Poor: £14,000 – £18,000
Average: £18,000 – £23,000
Good: £23,000 – £29,000
Excellent: £29,000 – £48,000



DISCOVERY

2017 to present

THE FIFTH-GENERATION Discovery doesn't get a number after its name, but there's no mistaking what it is with its striking new looks (which have ruffled a few feathers). It is also more capable, on- and off-road, than any of its predecessors as well as more economical to run thanks in part to the new JLR Ingenium series of engines. We have no doubt that it will be winning a lot of awards for the best tow car, just like its predecessors.

BUYER'S TIP: Still arguably the most versatile Land Rover.

SPECIFICATIONS

2.0-litre SD4 turbodiesel, 240 bhp, 369 lb-ft; 3.0-litre Td6 diesel, 258 bhp, 443 lb-ft; 2.0-litre I4 petrol, 296 bhp, 332 lb-ft; 3.0-litre Si6 s/c petrol, 340 bhp, 332 lb-ft. Eight-speed automatic gearbox.

PRICE GUIDE

Poor: N/A
Average: N/A
Good: N/A
Excellent: £36,000 – £45,000
New: £43,495 – £65,995



RANGE ROVER VELAR

2017 to present

THE LATEST addition to the Land Rover family is yet another Range Rover. Solihull spotted a very small gap between the Evoque and the Sport, and the Velar has been squeezed into it. This probably isn't the sort of car you would risk at a weekend's pay and play off-road course, but if you did you might be surprised at its ability. There's a lot of tech packaged into this luxury model, but it doesn't come cheap.

BUYER'S TIP: This is definitely one to impress the neighbours.

SPECIFICATIONS

2.0-litre turbodiesel, 180 bhp, 240 bhp & 300 bhp, 317 lb-ft, 369 lb-ft & 516 lb-ft. 2.0-litre petrol, 250 bhp, 300 bhp & 380 bhp, 269 lb-ft, 295 lb-ft and 332 lb-ft. Eight-speed ZF automatic gearbox.

PRICE GUIDE

Poor: N/A
Average: N/A
Good: N/A
Excellent: £36,000 – £58,000
New: £44,830 – £85,500



RANGE ROVER EVOQUE 2

2019 to present

THE SECOND-GENERATION Evoque is the first car to adopt JLR's Premium Transverse Architecture, a platform that will allow them to introduce a plug-in hybrid model. It gets a clutch-based torque vectoring four-wheel drive system, nine-speed auto as standard and redesigned all-independent suspension. There's a choice of seven engines: four diesel, three petrol. Evoque has come of age and remains stylish.

BUYER'S TIP: Competitive value on monthly finance

SPECIFICATIONS

D150: 2.0-litre, 150hp diesel FWD man and auto; D180: 2.0-litre 180hp diesel AWD auto; D240, 2.0-litre, 240hp, diesel, AWD, auto, P200: 2.0-litre, 200hp, petrol, AWD, auto; P250, 2.0-litre, 249hp, petrol, AWD, auto; P300, 2.0-litre, 300hp, petrol, AWD, auto.

PRICE GUIDE

Excellent: £28,000
New: From £31,295



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RANGE ROVER P38

1994 Range Rover P38, 160,000 miles, HSE so was a top of the range model back in day, comes with 12 month MoT, new starter motor, spark plugs, fresh oil, oil filter, air filter, brake fluid changed, cream leather interior in good condition, bodywork is fair, doors and bonnet have been replaced at some point to a different shade of blue, runs on LPG, I pay 52p per litre for that, heated front screen and heated seats, air conditioning, stereo fitted but requires wiring up, cruise control, tyres all have decent tread, cheap workhorse, , **£850, 07703 068088, West Midlands.**



FREELANDER 1

2006 Freelander, diesel 2.0-litre, very

economical on fuel, good condition, MoT until May 6, 2020, 198,000 miles, quick sale, **£890 ono, 07598 428613, Barnet (London).**



FREELANDER 1

Freelander Kalahari, 1.8 petrol, manual, very stylish, owned by mechanic, who can tell you about the Freelander, new head gasket amongst many other new parts such as discs, pads, tyres, etc, 12 month MoT, **£1095, 07887 636968, Denbighshire.**



FREELANDER 1

2004 Freelander 1, 2.0-litre diesel, 130,000 miles, alloy wheels, electric windows, aircon, rear tinted windows, logbook, full vehicle history, new clutch and gearbox, central locking, key and fob, been a great 4x4 for me, **£1200, 07901 644949, Ipswich.**



DISCOVERY I

1998 Discovery 300 Tdi, 124,000 miles, rare two-door manual in white, solid body, paintwork and interior need TLC, nearly new BF Goodrich mud tyres, MoT until February 2020, **£1450, 07889750126, South East London.**



DISCOVERY 2

2003 Discovery 2 Td5, 160,000 miles, 5-speed manual, 12 months MoT, part service history, full book pack, tow bar with electrics, 7 seater, back 2 fold down or can come out, electric windows and mirrors, twin sunroof, alloy wheels with 4 good all-terrain tyres, **£1595 ono, 07943 876645, Ryton, Tyne and Wear.**



DISCOVERY 2

2001 Discovery 2.5 Td5 with a reliable auto gearbox, overall in excellent condition throughout, 7 seater, 140,000 miles, MoT June 2020, two keys, Td5 engine which runs very smoothly, all common rust spots have been welded and reinforced, maintained with absolutely no expense spared, both the exterior and the interior of the car are in very good condition, bodywork is very clean as the photos show, everything working the way it should including full electric windows and mirrors, climate control, air conditioning, radio, central locking spare tyre will all nuts, **£1999, 07495 940367, Solihull.**



DISCOVERY 2

2003 Td5 Discovery 2, 191,871, good

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service history, MoT until Feb 2020, 4 very good BF Goodrich ATs, intermittent electrical fault — driver's window and RHS pass door lock, otherwise sound reliable 7 seater. **£2000 ono, 07407 440580, Edinburgh.**



DISCOVERY 2

Stunning Discovery 2 Td5 Landmark, 143,000 miles, full service history, two keys, full black leather interior, twin sunroof, seven seats, digital climate control, electric windows doors and

mirrors, tow bar, roof rails, 18" 5 arm double spoke alloy wheels, great family vehicle, lots of invoices for work done, best colour combo. **£2950, 07754 627437, Glasgow, Scotland.**



DISCOVERY 3

2006 Discovery 3 TDV6, 173,000 miles, full black heated leather, Harmon Kardon sound system, long MoT, drives very well with no problems at all with the engine, unfortunately does have a small air leak on the suspension, doesn't affect the car when driving, suspension drops a little

overnight, goes back to correct height when you start it up in the morning, dent in the driver's rear door, is currently in everyday use and never lets us down, will go quickly due to competitive price. **£2500, no offers please, 07850598332, Brighton, Sussex.**



RANGE ROVER P38

2000 Range Rover P38 4.0 V8 HSE Auto, fully loaded, long MoT, 110,000 genuine miles, service history, long MoT, fantastic driving 4x4, smooth petrol engine, full cream leather trim, Harmon Kardon

speakers, electric windows/mirrors/seats/sunroof, alloys, **£1795, 07494 727969 or 07495 048595, Dulwich, London.**



RANGE ROVER P38

1999 Range Rover P38, 172,373 miles, good runner, great body, reliable, lot of money spent on bringing it up to spec, new suspension bags all round, new injector pump, new battery, new tyres, refurbished wheels, new radio 7 inch screen, Bluetooth, new brake discs and pads, electric windows and seats, good



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looker and good buy at **£2675, 07504 271201 or 07908 443854, Kent.**



DISCOVERY 2

2003 Discovery Td5, 196k miles, 11 months MoT, just had a service, all oils (engine, gearbox & axles) changed, a solid vehicle, **£2750, 07921 916663, Tadley, Hampshire,.**



RANGE ROVER P38

1998 Range Rover 2.5 DSE diesel uuto, 130,000 miles, New MoT December 10, 2019, have owned it for six years, have spent loads on it, Polybushed, old suspension removed and replaced with more reliable new coil springs and new shock absorbers, gearbox oil and filter renewed, usual services completed, lots of paperwork, very reliable dependable and comfortable, **£2750, 07557 808887, Witney, Oxfordshire.**



FREELANDER 2

2007 Freelander 2 HSE, 11 months MoT, 231,000 miles, all done on motorway, heated leather seats, parking sensors, lots of work done, new clutch and flywheel, new power steering pump, new brake pads, runs and drives perfectly, bodywork is mint, **£2200, 07814 633431, Darlington, County Durham.**

£3000 - £4999



DISCOVERY 2

Discovery 2 Td5 manual, 2 months MoT, 160,000 miles, lovely colour, stunning interior, no rot, good chassis, no paint so nothing to hide underneath, service book, but used for business towing catering trailers so had to be 100 per cent reliable, all faults fixed immediately, adjustable height tow hitch with electrics, heavy duty Terra Firma springs all round with 2 inch lift, bigger wheels can be fitted straight on, all the hard work done, fuel tank recently cleaned also new fuel pump, injector seals all renewed plus gasket, fuel pressure regulator gasket, all done in the last 12 months, never taken off road, starts on the button drives flawlessly, no fault lights on dash, plenty of power, **£3300, 07843 448275 or 01443 675939.**



DISCOVERY 2

2003 Discovery 2 Td5, will come with full years MoT, brand new side steps, only 115,000 miles on it, 4 electric windows, remote central locking, CD player, power steering, all tyres good, **£3750, 07584 432131, Portadown, County Armagh.**



DISCOVERY 3

2005 Discovery 3 HSE 2.7 TDV6, 190bhp,

auto gearbox still working really well, air suspension faultless, 7 seater, 176,000 highway miles, full Land Rover specialist service history, all belts been changed, 2 keys, 3 keepers from new, MoT until end of April 2020, cheap road tax bracket £325 for the year, very good condition inside and outside, drives perfectly with no faults at all, **£3995, first to see will buy, 07445 320877, Peterborough.**



FREELANDER 2

2007 Freelander 2 Td4 2.2 diesel automatic, 166,500 miles, MoT Jan 2020, shouldn't have a problem getting new MoT, high spec with alarm, sat nav, electric sunroof, climate control, cruise control, R18 alloy wheels, electric windows seats and mirrors, heated front seats, in-car entertainment system, parking sensors, roll away parcel shelf and a boot liner, fitted with roof rails, side steps and a tow bar, ready for winter, reliable 4x4, comfortable drive, **£3550, 07522 245625, Devon.**

FREELANDER 1

2003, 1.8 petrol, 93,000 miles, 4 mm tread on tyres all round, six spoke wheels, removable top, overheating, issues with thermostat or gasket, still runs well, new gasket purchased but not installed, spare engine and box, propshaft taken off, light metal green, clean underneath, currently SORN, too good to scrap, needs an enthusiast to fix the faults, **£4000 ONO, 07816 972201 or 01278 732481, Somerset.**

£5000 - £9999



DEFENDER 90

1998 Defender 90 300Tdi, pretty sorted mechanically, have a long two-page list of replaced components, will share with

serious enquirers, runs like a dream and also clean underneath, inspection welcome, genuine MoT until August 2020, touchscreen CD player, centre seat removed cubby box installed, heated seats in the front, installed side facing bench seats in the back, roof adapted for tent (tent supplied), lots of new bits, 216,000 miles, **£5000, 07841 520080, Bradford.**



LIGHTWEIGHT

1972 Lightweight 200Tdi, 5-speed gearbox, coil sprung, galvanised chassis, good bulkhead, has been in regular use, **offers around £6000, 07855 227627, Staffordshire/Derbyshire border.**



FREELANDER 2

2011 Freelander 2 Sport LE SD4 auto 2.2 diesel, 2 keys, fully loaded, sat nav, heated seats, full service history, 131k miles, 3 owners, MoT until Sept 30, 2020, mechanically sound, drives really well, first to see will buy, need more info or to arrange a viewing call, **£6500 07946 532101, Derby.**



SERIES III

1984 Series III SWB 88in, hard top, 2286cc diesel, excellent condition, service history, upgrades, repairs and replacements makes for a well looked after, easy running vehicle, new MOT,

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DEFENDER 90

Td5, pick-up, has a super winch and winch bumper, safari snorkel and roll cage, drives very well and everything works how it should, **£8125, 07470 096709, Milton Keynes.**



DEFENDER 110

1996 Defender 110 CSW 300Tdi, MoT August 2020, only 2 owners in the last 12 years, new clutch just fitted, new steering box 12 months ago, 200,000 miles, great runner, lots of work done, good condition, **£8500 ono, 01424 854892, Hastings, East Sussex.**



DEFENDER 90

2001 Land Rover Defender Td5, only 93,982 miles, you are unlikely to find a better Td5, MoT until September 4, 2020, no MoT advisories, just had the chassis re-coated again inside and out with Waxoyl, chassis really good condition, recently had the roof, rear door and chequer plating professionally resprayed, in 2012 Dermot McConaghy, the famous street artist, painted this vehicle, afterwards it was lacquered over to protect his work, the work was turned into a short film, follow the link on YouTube <https://youtu.be/RVYB6IX3dBg>, vehicle has loads of service history with one very caring owner having it for most of its life, used on the road almost exclusively, my Land

Rover mechanic commented on "how tight she was", 4 x Toyo Open Country M/S tyres like new, rear inside of tub lined with bedliner, **£8995, 07879 666350, Cookstown, N Ireland.**



DEFENDER 1110

Defender 110 2.5, strong and reliable truck, 135,000 miles, 12 month MoT, passed with no faults, has been working in a vineyard for the past 6 years, simply not using it enough, has good mud terrain tyres and is a great truck to drive, chassis in good nick, little bit of flaking paint, damage to the lfor top, tear on the front driver seat, usual wear and tear expected on a truck like this, heavy duty suspension (3500 kg), **£7,500, 07825 652581, East Grinstead, West Sussex.**



DEFENDER 90

Defender 90 van, good clean example, 147,000 miles, any inspection or test drive welcome, located near Cowbridge south Glamorgan, **£8500 plus VAT, selling on behalf of a friend, 07784 783356.**



DEFENDER 110

1998 Defender 110 300Tdi, 149,000 miles, MoT Sept 2020, BF Goodrich all-terrain tyres, owned for 8 years, lack of use forces sale, runs well and extremely reliable, will miss her, **£9250 ono, 07825 056628, East Sussex, .**

£10,000 plus



WOLF

110 Defender Wolf XD 2.5 300Tdi, 1998, RHD, hard top, 47133 miles, vgc, MoT May 2020, 24v, PAS, R380 gearbox, FROPS, Rad Haz kit, snorkel, G90 tyres, spare wheel, 8 rear seats, **07802 184074, £11,000 ono, Bristol.**



DEFENDER 110 DC

2010 Defender 110 double cab, includes canopy, 49,000 miles, estate vehicle, well maintained and serviced, some minor dents and scratches as would be expected from a working vehicle of this age, low mileage and currently only used sporadically on shoot days so light use, **£11,000 plus VAT, 07745 804489, Dunkeld, Perth and Kinross.**



DISCOVERY 4

2010 Discovery 4, full facelift, only 62k, 2 keys, no scams or stupid offers, in no rush to sell, **£14,000, 07845 181053, Sunderland, Tyne and Wear.**



DEFENDER 90

2003 Defender 90 Td5, XS Station Wagon, 12 months MoT, 4 folding seats, fully serviced by Land Rover independent specialist, privacy glass, fully gassed air conditioning, electric windows, Black Boost alloys with Cooper ST tyres (nearly new), full KBX grill and vents, fully undersealed by Nene Overland, upgraded lights and front bumper, upgraded seat rails to improve leg room, sensible chip to 160bhp by Nene Overland, a fantastic looking and driving Defender in excellent condition, reluctant private sale, private reg not included, 79,000 miles, **£16,000, 07976 894463, Witney, Oxfordshire.**

EDITOR'S CHOICE



SERIES I

1952 80in, in good condition, needs a respray and a bit of tlc, overdrive, new canvas, 64,000 miles, used on a monthly basis, selling due to ill health, **£18,000, 01453 549908 or 07851 547173, Dursley, Gloucestershire.**

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- **pocketmags.com**
- **applenews+.com**
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"And if we like the idea, we'll then go and buy a proper roof tent..."



IAN WEST

Ian's been driving Land Rovers for over 40 years and drawing for LRM since issue 2. He lives on the coast of East Anglia and drives a Freelander 2

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1951 SERIES I 80 INCH

CONRAD YATES, JERSEY

How long have you owned Her Maj?

The reign of Her Maj, as I affectionately call my 1951 Series I 80 inch, has been several years longer than that of Queen Elizabeth II, which is no mean feat. And I have been lucky enough to have served as a devoted equerry to Her Maj for over 25 years now.

Is it a case of she gets better with age?

When I purchased her in 1995 for the princely sum of £800, she was complete, but in a rather sorry state. She had her original engine and chassis, but was sporting some homemade and somewhat colonial front wings (based on the angular Canadian military derivatives, I was told) and a bulkhead full of holes. At that time she was my first car, and I ran her like that as a daily commute. However, despite living in sunny Jersey, Channel Islands, I quickly realised that this was not going to be a viable prospect for our long-term relationship. My job at the time as a lawyer required a suit that was neither damp nor oil-stained every morning, something that Her Maj found hard to deliver. So for a long time she

found herself mothballed in a shed.

What a story. When did the TLC begin?

Around ten years ago though I commissioned a gentle restoration. I wanted to keep the original engine and chassis, but sourced period wings, had the bulkhead rebuilt and gave her a proper mechanical overhaul. My goal was to get her running again but keep her original patina. Her Maj was always going to be a keeper, but I wanted to drive her again – and drive her hard. Despite her regal moniker, I didn't want a garage queen.

What do the family think?

To that end, I also wanted a little more comfort, so treated her to a new hood frame, canvas and full set of seats from Exmoor Trim. By this stage I had young children, and Her Maj quickly became their favourite mode of transport.

Good things don't last forever though

Probably the hardest thing about living with her, is watching Her Maj succumb to the tell-tale signs of old age. Anyone with an old Land Rover will know that the chassis

wears away from the inside, and although she looks fantastic, she now has a few tiny pin holes appearing on the underside of the chassis rails, particularly the driver's side. Repairing these will be the next job – a little nip and a tuck, if you will, to keep her highness light-footed. Pending that surgery, I've just this week given the chassis an anti-rust treatment, and repainted the visible bits. She does have standards to keep up.

Does she have a jealous family?

She'll have to be patient too, as nowadays I have five other Land Rovers which all require equal amounts of attention. A Keswick green V8 Ninety soft-top that I rebuilt several years ago, a scruffy red 300Tdi, a Marine Blue Series III, a black Supercharged L322 and most recently a Keswick 110 with the Puma engine, which is destined for an interesting rebuild. But that is another story, so they say.

How can LRM readers keep up with your fleet and her Maj?

You can catch up with Her Majesty and friends on my instagram account @islandrovers.

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LR017952G / FTC902G	1987 - 2006 & 2007 onwards	Front	Vented
FTC3846G	1987 - 2006	Rear	Solid
LR017953G / FTC1381G	1987 - 2006 & 2007 onwards	Rear	Solid
LR018026G / SDB000330G	1987 - 2006 & 2007 onwards	Rear	Solid
Discovery 1			
LR017951G / FRC7329G		Front	Solid
LR017952G / FTC902G		Front	Vented
LR017953G / FTC1381G		Rear	Solid
Discovery 2			
SDB000380G		Front	Vented
SDB000470G		Rear	Solid
Discovery 3			
SDB000614G		Front	Vented
SDB000604G		Front	Vented
SDB000646G		Rear	Vented
SDB000636G		Rear	Vented
Discovery 4			
SDB000624G		Front	Vented
SDB000604G		Front	Vented
LR025946G		Front	Vented
SDB000646G		Rear	Vented
SDB000636G		Rear	Vented
Discovery Sport			
LR059122G		Front	Vented
LR007055G		Front	Vented
LR061388G		Rear	Solid
Freelander 1			
SDB100830G	Up to YA999999	Front	Solid
SDB101070G	1A000001 onwards	Front	Vented
Freelander 2			
LR000470G / LR027107G	Petrol	Front	Vented
LR001019G	Petrol	Rear	Vented
LR007055G	Diesel	Front	Vented
LR001018G	Diesel	Rear	Solid
LR039935G	From DH000001	Rear	Solid
Range Rover Classic			
LR017951G / FRC7329G	1986 - 1991	Front	Solid
LR017952G / FTC902G	1986 - 1994	Front	Vented
LR017953G / FTC1381G	1986 - 1994	Rear	Solid
Range Rover P38			
NTC8780G	1995 - 2002	Front	Vented
SDB000470G	1995 - 2002	Rear	Solid
Range Rover Sport			
SDB000614G	2005 - 2009	Front	Vented
SDB000604G	2005 - 2009	Front	Vented
SDB000624G	2005 - 2013	Front	Vented
LR025946G	2010 - 2013	Front	Vented
SDB000646G	2005 - 2013	Rear	Vented
SDB000636G	2005 - 2009	Rear	Vented
LR016192G	2010 - 2013	Rear	Vented
LR016176G	2014 onwards	Front	Vented
LR038934G	2014 onwards	Front	Vented
LR033303G	2014 onwards	Rear	Vented
LR033302G	2014 onwards	Rear	Vented
Range Rover L322			
SDB000201G		Front	Vented
SDB500182G		Front	Vented
LR031843G / SDB500193G		Front	Vented
LR031845G		Front	Vented
SDB000211G		Rear	Solid
LR031844G / SDB500202G		Rear	Vented
LR016176G	2010 - 2012	Front	Vented
LR031846G	2010 - 2012	Rear	Vented
Range Rover L405			
LR016176G		Front	Vented
LR038934G		Front	Vented
LR033303G		Rear	Vented
LR033302G		Rear	Vented
Range Rover Evoque			
LR007055G		Front	Vented
LR027123G		Rear	Solid
LR059122G	17" wheel	Front	Vented

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